

INTERSTATE MEDICAL JOURNAL.

Vol. XVI.

FEBRUARY, 1909.

No. 2.

EDITORIAL.

LITERATURE AND INSANITY.

The French medical mind in relation to the literature of France is peculiar in that it does not hold itself aloof from a scientific appreciation of those superior minds who in their highest flights of genius are prone to brush the line of cleavage between sanity and insanity. In other countries, we take it, doctors leave the contemplation of abnormalities, as they manifest themselves in the actions of their literati and in the literary performances which are above the ordinary, to the analytic critics who make a specialty of character-building. Now, although this is convenient in so far as it relieves the medical mind of the onus of difficult gropings in mazes that are too tantalizing for easy solution, it results in many prevarications of the truth, not because of any intentional desire to distort, but because the purely literary critic is but ill-prepared to envisage a matter which, while it may not entirely belong to the domain of medicine, should be approached from an avenue that is open only to the medical mind. Illumination of intricate subjects without the help of a scientific knowledge of the matter in hand, rarely results in what Lord Acton calls "the dogma of impartiality." But though it may be contended in certain quarters that the subject of vagaries as they pertain to the intellectually elect is not fraught with enough scientific purport to arrest the sort of medical thought that nurtures itself on distinct signs and symptoms of disease, it must nevertheless be conceded by all fair-minded votaries of the art of medicine, that the makers and influencers of our intellectual main-currents are the decided forces in the upbuilding or lowering of the morale of a community and therefore should be adjudged rightly by the scientific critic. Again, what better exercise to arouse the torpidity of a mind inured to the drab humdrumness of general practice, than to engage it in the complicated but withal fascinating study of the literary workers who have played openly and without fear, on an ampler stage than is wont to be the case with those

whose sanity, as conceived by a conventional society, though an asset greatly to be desired, impresses the age in which they live to so slight a degree that succeeding generations remain uninfluenced by the ripples their presence may have caused.

As we said before, the acumen and perspicacity of the French have recognized the possibilities of the subject, and as evidences of their faith in the good results which a deep study, combined with analysis, may bring forth, the array of books written by medical men in the past year bears excellent witness. Whether we consider "Poetry and Insanity,"¹ "The Insanity of Gérard de Nerval,"² "Thomas De Quincey,"³ "The Degeneracy of Edgar Allan Poe,"⁴ "Literature and Insanity,"⁵ or "The Neurotics," by Mme. Arvède Barine, the same thought recurs, namely, the insoluble problem of the relation of genius to insanity. And of all the centuries which can make boast of extreme literary activity, the nineteenth century appears to be the one which has been most productive of a decided interplay of genius with insanity. So great has been this tendency that the critic who attempts inquiries into the matter must perforce conclude that the best expressions of the mentality of that time were so largely overlaid by a multitude of actions that derive their sustenance from sources peculiar to the insane, that even though a desire for fair play rules his judgment, his straightforward opinion must incline toward the cognition that the majority were surely insane in the fourth, sixth or eighth degree, if not semi-insane as some authorities have contended. Assuming the postulate that the intellectual regenerators of an age are not the possessors of the sanities which act as ballast with those who are less fortunate in the way of extreme mental development—and now we are limiting ourselves to those prose-writers whose biting phrases have changed the currents of thought so completely that there was a radical upheaval of the somnolence attaching to accepted verities—the transition to the masters of poesy as illustrative of an abnormality resulting from intense subjectivity, is readily made and is easy of comprehension. For of all the arts, that of poetry implies an impetuosity with small respect for the conventions and a combativeness that is continually gathering its forces to destroy the petty meannesses that encumber our better natures.

1. Poésie et Folie, par Drs. Anthéaume et Dromard.

2. La folie de Gérard de Nerval, par Dr. Barbier. Thèse de Lyon; chez Rey.

3. Thomas de Quincey, mangeur d'opium, par Dr. Paul Guerrier. Thèse de Lyon; chez Rey.

4. La dégénérescence d'Edgar Poë, par Dr. Carrère. Thèse de Toulouse.

5. Littérature et folie, étude anatomo-pathologique du génie littéraire, par Dr. Paul Voivenel. Paris: Felix Alcan.

Were all this accomplished by a philosophy that takes its cue from the sane and health kaleidesopic presentment of modern life there would be less cause for exhibitions of mental states that appal on account of their close affinity with those which are only too well-known to the alienist. Unfortunately this is not so, and what we do see is that the clearer and more dulcet the song of the poet—it cannot achieve clarity and the distinction of unusual melodiousness without an obsession of subjectivity—the stranger are the mental traits that warp the props which make for stability. In fact, it has been shown by Drs. Antheaume and Dromard that some of the poetry emanating from the alienated is no mean verse; and that were the source unknown, many good critics would attribute the productions to acknowledged masters of the poetic art. As a further proof of what mental instability may stand for as the powerful agent in the making of poetry of the highest order, we need but cite the case of the French poet, Gérard de Nerval, who wrote "Sylvie," one of the masterpieces of French literature, at a time when no self-respecting alienist would have pronounced him sane. And not only was this poem written under circumstances diametrically opposite to what are supposed to be the necessary conditions for literary composition, but many of his other poems had a like birth; from which we may infer that it was the insane Gérard de Nerval to whom the world is indebted for some of the best expressions of French poesy.

What has been said of Gérard de Nerval may be said in a lesser degree of other masters of song—of Poe and Baudelaire, of Rossetti and Francis Thompson. Although their express testimony as to their mental states while composing is lacking, none of them can be considered consecutive and logical thinkers, judged by their best productions. As for the disfiguring touches which manifested themselves in their daily avocations, it is significant that abuses of drugs and alcohol played no minor part and may have contributed their share in changing both character and endowments. Be this as it may, the fact remains that the outstanding feature in the lives of the poets we have mentioned is that mental instability was the positive exciting cause of their best productivity, and that the high lesson to be conveyed is the disturbing thought that, despite our many studies in the province of psychiatry, we have not yet solved the relation of genius to insanity.

CLEMENCEAU AND THE RIOTOUS MEDICAL STUDENT.

The medical student who was supposed to have come under the yoke of the best civilizing forces of our well-arranged society many years ago, is again displaying the truculency that censorious critics are in the habit of associating with unreformed and unrefined savages who persistently hold aloof from benign influences. That such should be the case must be a source of worry to those who have downed their prejudices sufficiently to admit that, despite outward appearances, the medical student is really a passive entity whose ebullitions when he attempts to right his wrongs, are upheavals of slight moment that bear the hall-mark of a deprecatory puerility. In truth, this belief, were it sanctioned by a complete knowledge of the inner life of the medical student, would be about the most engaging to entertain; but since facts speak more loudly than ideas derived from outward appearances it behooves us to say that the medical student, while not enamored of belligerency, is decidedly radical when infringements of his rights occur. Now, while it may be contended that his rights were not interfered with by the new examinations instituted by the Faculty of Paris—the examinations entitled qualified men to certificates of admissibility for the posts of *professeur agrégé* in the different medical faculties in France—the fact that the new ruling had for its object the creation of a higher class of practitioners must not be lost sight of. The act, then, of the authorities could not be construed otherwise than a reflection on the State diploma of doctor of medicine; a criticism that meant small respect for the wearisome years in pursuit of a goal; a mandate that read that the republic of medicine was no longer a republic but a limited monarchy to be governed by the privileged classes. Naturally the radicalism of the normal medical student felt itself outraged, and though one might attribute such feelings to supersensitiveness, there was another factor outside the medical student's special province that added to the general indignation. The protest of the 12,000 medical men against the new departure was no small voice in the final demonstration that made it necessary for the Director of the Police to summon the mounted Republican Guards, for the weight of their opinion must have been an incentive to violence on the part of those already in a tempestuous frame of mind. As to whether or not the medical men preponderated in this small revolution, is still an open question; but judging from their indignation, on account of the questions in the new examinations including the elementary studies of anatomy and physiology, it is probable that they were quite active. In sum, there is here to contemplate and ponder a strife of Demos against Patricius.

Above the din and clatter incident to the disturbances in the Latin Quarter there appears a distinguished figure, the head of the Ministry, Georges Clémenceau, who must have viewed the uproar around the Faculty of Medicine with feelings that took him back to his own youth. For not so many years ago, Clémenceau, when a medical student, defied the Government on more than one occasion; was imprisoned for two months for attempting to celebrate the anniversary of February 24th, 1848; and was, to put it mildly, much more disorderly from the point of view of conservative society than any medical student in the recent French riots. But though his behavior as judged by the Imperial police was unconventional enough to necessitate a nocturnal visit to his lodgings, it did not interfere with his being busily engaged on a thesis that eventually gained him his degree,—“*Sur la génération des éléments anatomiques.*” Nor later on during the direful days of the Commune was he more tractable, for he was expelled from Montmartre and placed under arrest. These are not edifying things to cite nor are they of much value as a key to one's character. But since the Premier is called upon to decide whether or not the written objections sent him are feasible, would it be wise for him to forget just how he felt when Imperialism was the bugbear that drove him into open revolt?

The medical student throughout the world need not feel himself displumed because a demand, which should have been heeded, ended in a riot. What the French student asked for was within the bounds of reason and had, moreover, the great primal quality—the leveling of all men engaged either in the study or the practice of medicine. Class distinctions are well enough in their way in the eddying circles of our social maelstrom, but when they are introduced into an honored republic such as medicine has always been, they are to be decried. No matter how superior the graduate as an intellectual quantity, no matter what the name of the medical college, provided it has the proper standing, the man who bears a diploma should be the equal of all his medical fellowmen; not their superior or their inferior. The strength of the science of medicine lies outside social distinctions; it fructifies from soil that is not furrowed for seeds of petty dissension; its inherent qualities are such that out of a clod a real man worthy of its teachings may be evolved. So soon as it fails to do this the times will be ripe for the introduction, by ingenious authorities, of a superior order of medical men to dominate others of a lesser degree, in the hope that a republic may be superseded by a tinselled imitation of a monarchy.

THE OPIUM QUESTION.*

The future ambitious and ingenious collector of literature bearing on the sempiternal discussions on the anti-opium movement in China, will have no difficulty in amassing an enormous quantity of material, by comparison with which the vast collections stored in European muniment-rooms pale into insignificance. And that his ingenuity will be taxed and his patience sorely tried in case he desires to compile a statistical and historical work, needs no further mention here, for the complexion of the various opinions partakes of the exasperating involvements which always arise when all sorts and conditions of critics, of nationalities too numerous to mention, voice their sentiments. With this thought in mind, it is with some relief that we have recently read two decidedly sane expressions* of the dire situation in China: one from an English pen and the other from a Chinaman who has benefited enough by cosmopolitanism to be the detached critic unaffected by national emotionalism. Now though the Englishman is not to be criticised for any lack of data or clearness in the presentation of facts well known to all who have studied the situation, his optimism, in viewing the good results already accruing from the Edict published in the *Pekin Gazette*, September, 1906, is altogether too rampant to carry conviction. The importance of edicts is not to be slighted when the question of how best to abolish an evil is under consideration by a critic who has an Englishman's veneration for the law, but while recognizing their value as the iron hand that has the strength to crush, the national traits of a people and the form of government that exists, are not to be weighed too lightly. And in this respect the Chinaman makes many remarks that cut deep into all the problems which the Chinese are facing to-day, for with an insight that cannot be other than the product of the right interpretation of character, and with a calm appreciation of the results achieved from an awakening education, he boldly steps into the rôle of the wise and upright judge who recognizes the basic principles without which reform is impossible. Surely an autocratic government with great concern for its own bureaucracy and small concern for its people—its decentralization precludes a paternalism that would take cognizance of the advantages of education and the development of character—is not the power to appreciate the temper of a people, and combat by sober judgment and earnestness of intent a vice that has already one hundred million victims to its credit.

*The Opium Question. By Brittanicus. *North American Review*. Social Transformation In China. By a Chinese Cambridge-man. *Contemporary Review*.

At this late day recriminations are not only out of order but positively harmful as an obstacle to the solution of a problem. Whether or not the English, with their commercial instincts sharpened when a vast field was opened to them for an outlet of the best product of some of their Indian Provinces, were justified in their operations, is of no moment to-day. Commerce is not tinged with a kindly philosophy that makes for altruism; and although other nations may be critical of the English because of what has resulted from the introduction of a sedative among a people devoid of ambitions on account of a government that crushed their smallest aspirations, they cannot in all honesty proclaim for themselves a higher grade of purity in their commercial dealings with less advanced peoples. That the English had the *arrière pensée* that the most receptive victims for their Indian product would be an abjectly ignorant people eager for forgetfulness of their wrongs because tyrannized by a medieval autocracy, is claiming for a nation of great practicality too great a knowledge of the subtleties of sociology and ethnic traits. But that they were not loth to continue their operations directly they saw the commercial opportunities, is a phase of commercialism that might be criticised as "higher commerce," so indifferent is it to the behests of conscience. Had the Chinese Government been more solicitous for the welfare of their people and less avid of a medievalism that meant the shackling of the ignorant by the official class, the field for all these nefarious operations would have been limited; but at the time of which we speak and for years later on, education was only for the elect since the Chinese idea, abetted by a wise and self-sufficient government, read that to achieve the desired end thousands of volumes pertaining to classical and literary subjects had to be mastered.

A happier state for the people has already set in. The small revolutionary idea, which has as its inherent quality a sense of equalization, is responsible for the social foment which is awakening the people to the needs of railroads, public schools, newspapers and reviews. Editors of a commanding position have the ear of the people and through the medium of the *Min-pao* (the People) and the *Sin-min-chung-pao* (the New World), not to mention the ten newspapers published in Peking and the "protected" newspapers at Shanghai, the masses are already benefiting by an instruction which has been withheld from them only too long. All the edicts of an autocratic government are as naught when compared with this gradual social upheaval; for out of the free will of the people will issue the thought that only in education is there to be found the sword of Gideon with which to wreck the hydra-headed monster English commercialism has fed to sleekness throughout the retrograde provinces of China.

OPINION AND CRITICISM.

THE PSYCHOLOGY OF THE CHILD.

In the attitude of the modern instructor toward the child there are positive indications that the cult of seriousness, as it is worshipped by this special purveyor of knowledge, refuses absolutely to take cognizance of what is most natural, to-wit, the unreceptivity of the immature mind to the deeper meaning of all the problems which are part and parcel of stressful adult life. That purblindness to the needs of the evolutionary mind should preclude the intake of a mixed pabulum is not the brightest page in modern psychology, for while it may seem to the pedagogic mind that the narrow circle of cold facts should rigidly encompass the mind of the child, there is that extreme phase of sanity here that makes us fearful lest a fierce fanaticism may not be worse than the grossest laxity. The grave, dignified and extremely unhumorous ranks of modern teachers—a class of men who by their acts appear to be harking back to the old days of the humanists—are never at a loss for a new recruit to strengthen their claims as advanced spirits in the educational world; for though the firmament may look unpromising as regards the advent of a new luminary, this is but a deception due to the fact that the uninitiated are ignorant of the hidden wisdom and philosophy in the extraordinary proceedings of the many-sided interpreters of modern psychology. As illustrative of the inexhaustibility of the subject, nothing could be more pertinent than the latest utterances of Dr. Max Meyer, professor of experimental psychology at the Missouri State University.

According to this expositor of the art psychologic, it is baneful, to say the least, to sow on soil that should be subjected to the intricacies of the world's mightiest problems, the transparencies and incongruities of the fairy tale. Into what particular cells of the brain the nefariousness of so frivolous an undertaking fastens its fangs is not explained to an eager world, but that a great and irremediable harm is done cannot be questioned, for when the word goes forth nowadays that a proceeding is wrong from a psychologic point of view, the simpler and plainer medical mind is too abashed to protest. Hence it must occur to all of us that the entertainment derived from truly German sources—from a country that must be considered the unhappy home of the fairy tale since the frivolity of its people, despite their claims to intellectuality, shows a deplorable weakness for ogres and bewitched maidens—is unsuited to the mind of the growing American child; and that, if further indulged in, the vast beauties of our well-developed commercialism will be unappreciated by minds nurtured on the cobweb of easily-penetrated fantasy.

The real achievements of psychology are matters of moment and should invite the kindest of criticism. It is a fascinating study and has a latitude that must be the envy of other studies. But just because its limitations, if there are any, extend into those far distances impenetrable to the ordinary on-looker, there should be considerable saneness in all its undertakings as a deterrent to the indulgence of what is visionary. Already the mind of the child is being steered toward those interesting sexual questions without which a modern education is supposed to be incomplete, and though this unusual work is receiving the plaudits of many enthusiasts, the promise and presage of a more admirable turn of mind in the child is not yet discernible. There can be no question that we are making an onslaught on the illusory element in primary education, but when the child has digested our illuminating instructions will it benefit, or will it be only another interesting study in abnormality for some future Ibsen, Strindberg or Brieux? Indeed, there is nothing more startling for future contemplation than the rank and file of children made worldly wise by a complete understanding of the House of Rahab and a so-called commendable ignorance of the fairy tale.

LITERARY NOTES.

"As Others See Us," by James Graham Brooks (The Macmillan Co.), has unusual qualities, not because its merits are of a high literary order but because its contents are of so varied a nature that they include very nearly all the criticisms which European critics have seen fit to mete out to the waywardness and childishness of the American people. The first thought upon reading this book is one of revolt against the many unkind remarks that have been made about our shortcomings, by men and women ill-prepared for the somewhat difficult task of detecting the outstanding qualities which have always made for the best there is in our Americanism; but though the feeling of resentment may be strong enough to make the reader every now and then a bit distrustful of the justice attaching to the critic's thought, even when the thought is tempered with kindness, he cannot but see that much of what has been written about us is not too closely related to those prejudices which have their roots in narrow mindedness and the smallest sort of intellectual vision. That a young people, such as we are, is bound to come in for a goodly share of rather harsh criticism at the hands of Europeans whose training has been in a more literary atmosphere than can be found with us, should not fill us with dismay. Rather should it be a source of gratification that by comparison with older standards, when they are expressed by severe and self-restrained writers, our defects are brought home to us by the rule of rigid and inflexible justice. That all the critics of our national peculiarities have not been free from prepos-

sions and prejudices does not alter what we have just said, for though Charles Dickens had his quota of these human failings and allowed exaggeration to enter into his estimate of our Americanism, no more truthful words have ever been written than his description of American journalism in "Martin Chuzzlewit." After finishing so sane a book as is Mr. James Graham Brooks's "As Others See Us," the reader, if he is not barren of thought, will find himself a better American than he was before the intellectual activity of the writer made him aware of the bitter fruits of dishonor, overpraised mediocrity and unseemly vulgarity.

Plague Epidemics, as illustrative of the great destruction which they effected in the past, are always of interest to the modern reader. At no period in history were they more destructive than between the fifteenth and seventeenth centuries; therefore the thesis written by Dr. H. David and recently published by Maloine, of Paris, has considerable significance. The epidemic which receives the longest notice is the one which almost devastated the town of Angers in the sixteenth century, though it is well to mention here that even at that early day and for that matter years before—in 1407, to be exact—recognition of the fact that the hog is responsible for its transmissibility, was already an established factor in its study. Barber-surgeons and farriers were in the habit of keeping the blood taken from patients and animals and giving it to hogs as a fattening procedure. These were allowed to roam about the streets at will and feed on offal, and soon the danger of eating hog-flesh, the principal viand of the time, was recognized. On account of great dissatisfaction among the people laws were enacted and stringently enforced so as to prevent the sale of pork unless the hog was kept thirty days under strict surveillance, by the butcher, before its meat was sold in case it was got from a farrier, and forty days in case it was derived from a barber. When we remember how prone the hog is to the plague; that the bacillus of Yersin may be found in its blood even three or four weeks after a cure has been effected; that phlebotomy is an important part in the treatment of the disease, the laws which were made in 1407 were certainly wise ones, since, according to Willm, the inoculation with the blood taken from a diseased hog produces the disease in 83 cases out of every 100.

ORIGINAL ARTICLES.

THE SYPHILITIC FORM OF MULTIPLE SCLEROSIS.

By WILLIAM G. SPILLER, M. D.,

Professor of Neuropathology and Associate Professor of Neurology in the
University of Pennsylvania; Neurologist to the
Philadelphia General Hospital,

and

ANDREW H. WOODS, M. D.,

Assistant in the Neurological Department of the University of Pennsylvania,
Assistant Neurologist to the Philadelphia General Hospital.

Syphilis may bear a resemblance to multiple sclerosis both in its symptomatology and in its pathology. One of us in association with Dr. Camp* has reported a case which clinically appeared as one of multiple sclerosis from the symptoms of ataxia, intention tremor, scanning speech, pallor of the temporal side of one optic nerve, and vertigo. Those who saw the case regarded it as one of multiple sclerosis, and yet the microscopical examination showed round cell infiltration and thickened vessels without sclerotic patches—the common findings of syphilis of the nervous system.

We propose in this paper to consider the pathological aspect of the subject, and to show that syphilis may cause sclerotic patches in the central nervous system resembling the degeneration of multiple sclerosis without necessarily producing the symptoms of the latter disease.

Susan D. was admitted to the Philadelphia General Hospital in the service of Dr. Mills, November 28, 1907, and afterward came into the service of one of us (Dr. Spiller). She died March 17, 1908. She entered the hospital because of pain and weakness in the lower limbs and inability to walk. She had had three children and four miscarriages, and denied syphilitic infection. When she entered the hospital she stated that five weeks previously she had first noticed the weakness of the lower limbs, and about five days later she began to have severe pain in these limbs below the knees. She had lost control of the bladder and bowels. Her age was given as 52.

The pupils were equal and regular. The iridic reactions to light, accommodation and convergence were preserved. The grip of each hand

From the Department of Neurology and the Laboratory of Neuropathology in the University of Pennsylvania, and from the Philadelphia General Hospital.

*Spiller and Camp. American Journal of the Medical Sciences, June, 1907.

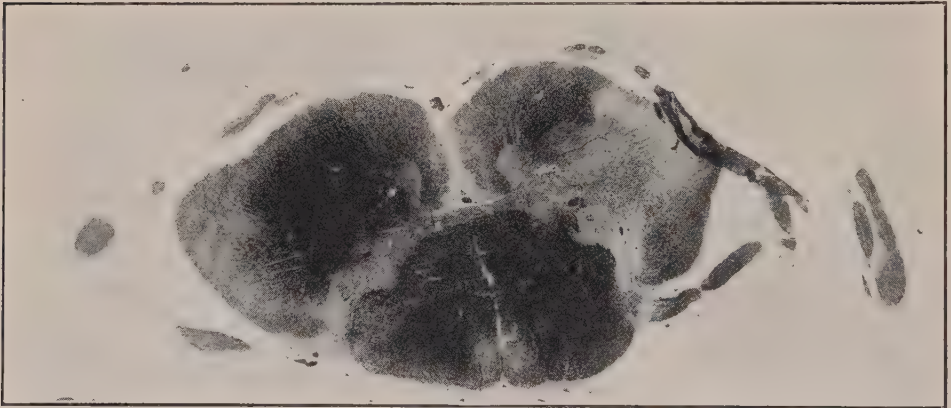
was somewhat diminished, as was also the voluntary power of the upper limbs. The biceps and triceps reflexes were exaggerated.

The lower limbs were edematous and were kept flexed at the knees, and movement of these limbs caused much pain. The patellar reflexes could not be obtained, probably because of the position of the limbs. There was a suggestion of ankle clonus on the left side.

An examination made by Dr. McConnell, in Dr. Mills' service, December 1, showed atrophy of the right interosseous muscles. There was no tremor of the limbs. The patient had very little voluntary movement of the lower limbs. Sensation seemed to be normal in all forms.

She remained in much the same condition until her death, March 17, 1908.

The symptom-complex was therefore one of spastic paraplegia of the lower limbs with contracture of the limbs, and pain produced by passive



Sclerotic plaques in a section from the cervical region.

We are indebted to Dr. Alfred Reginald Allen for the photograph.

movement of these limbs, probably because of the contractures; exaggeration of tendon reflexes in both upper and lower limbs, although the reflexes could not be well demonstrated in the latter because of the position of these limbs; and loss of control of bladder and rectum, with preservation of objective sensation. The typical symptoms of multiple sclerosis were absent, as there is no mention of scanning speech, intention tremor, nystagmus, etc., and the diagnosis of multiple sclerosis was not made.

Numerous areas of sclerosis are found throughout the cervical and upper thoracic regions of the cord, and are confined to these regions. Some of these resemble very closely the degenerated areas found in multiple sclerosis. They affect the grey as well as the white matter, are of various shapes and sizes, and in general are not sharply defined from the surrounding normal tissue, but shade off gradually into the normal tissue. There are, however, regions in which the definition between the degenerated and normal tissue is quite sharp, as in multiple sclerosis.

The small vessels of the cord are much thickened in many regions; and the neuroglia around many of them is denser than in other places, making it appear as though a perivascular sclerosis were the origin of some of the sclerotic patches.

Many of the vessels in sclerotic foci are distinctly thickened, but there cannot be said to be any increase in the number of the vessels in these foci.

Round-cell infiltration is distinct in the pia, but is of only moderate intensity. The vessels of the pia are somewhat thickened although they do not show a very distinct proliferation of the intima.

Some of the nerve-cells of the anterior horns show intense pigmentation, and in some places the nuclei are displaced to the periphery of the cells.

Round-cell infiltration of the pia is present in the optic nerves. It is not intense anywhere.

Secondary degeneration is not very distinct.

While the resemblance between the sclerotic areas in this case and those of ordinary multiple sclerosis is, on superficial examination, very striking, the two conditions differ in essential features. The round-cell infiltration of the pia; the gradual shading off of the sclerotic areas into the normal tissue instead of the sharp line of differentiation; the vascular and perivascular sclerosis in regions of the cord where there is no distinct focus of sclerosis, indicate that the process is syphilitic, and distinguish it from the disease known as multiple sclerosis. And yet it is well to bear in mind that in multiple sclerosis the definition between the sclerotic and normal regions is not invariably sharp, and that there may be thickened blood-vessels within the sclerotic foci.

v. Bechterew in 1896 spoke of the syphilitic disseminated sclerosis in which areas of sclerosis occur in the brain and spinal cord, as a little known type of syphilis. In the thirteen years that have elapsed since the appearance of his paper few important contributions with necropsy reports have been made to this subject.

v. Bechterew discussed the question as to whether the vascular thickening in the sclerotic areas was primary and the cause of the surrounding sclerosis, or was secondary to this sclerosis. The syphilitic nature of his case was shown by a gumma of the left optic thalamus and the characteristic disease of the basilar artery. The foci of sclerosis were found about much thickened blood vessels. Thickened vessels were observed in parts of the brain without the surrounding sclerosis, and were present in all the sclerotic areas; and v. Bechterew has no hesitation in saying that the thickening of the blood vessels was primary. He found secondary degeneration in the spinal cord and brain as a result of the sclerotic foci, also hemorrhages in and near the foci and softening about some of the foci; all of which lesions are not characteristic of multiple sclerosis.

Clinically v. Bechterew's case was not typical of multiple sclerosis. The nervous symptoms appeared one year after the syphilitic infection.

After study of the limited literature on the subject he was forced to conclude that previous to the appearance of his own paper the disseminated syphilitic sclerosis was not well established.

He attempts to differentiate clinically between the true and the false multiple sclerosis. In his case weakness of the lower limbs was an early symptom, this he thinks uncommon as an early sign of multiple sclerosis, and in this disease it never is a pronounced paraplegia. [One may with reason doubt the correctness of this statement.] Disturbance of the bladder was an early symptom in his case; this is seldom an early symptom in multiple sclerosis. The early paresthesia of his case likewise is uncommon in multiple sclerosis. Local tenderness of the vertebræ to percussion, present in his case, he regards as common in syphilitic spinal affections, but it has not been observed in multiple sclerosis. The tremor of the limbs and head, the scanning speech, and nystagmus were not present in his case, and he thinks it important that attention should be paid to these symptoms, as further observation may show that they are usually or always absent in the syphilitic disseminated sclerosis. The case of Spiller and Camp shows, however, that intention tremor and scanning speech may be caused by syphilis even without the formation of plaques. The syphilitic form seems to have a more acute course; in v. Bechterew's* case the duration of the process was one year and three months, and yet acute multiple sclerosis is recognized. The syphilitic form v. Bechterew mentions is influenced by anti-syphilitic treatment, but this seems to us most unreliable in distinguishing the disease from multiple sclerosis, as changes in the intensity of the latter disorder are common. The early paresis of ocular muscles in his case he also employs as diagnostic.

In v. Bechterew's case the foci were in the brain as well as in the spinal cord; in our case they were only in the cord, and yet clinically and pathologically the two cases have much in common.

Catola has given an excellent résumé of the views of various authors on syphilis as a cause of multiple sclerosis as held at the present time. Some writers have attempted to distinguish a form of sclerosis with somewhat indefinite boundaries, complete degeneration of medullary sheaths and of axis cylinders, and secondary degeneration, as distinct from the usual type, and as having syphilis as one of its causes (Marie).

Müller regards the syphilitic multiple sclerosis as secondary to arteritis.

In the opinion of some the syphilitic multiple sclerosis is to be distinguished by degenerative changes of the nerve cells and axis cylinders, by secondary degeneration, and by thickening of the vessels within the sclerotic areas.

There is such a difference of opinion as regards the tissue first affected in multiple sclerosis that we have no means of reconciling the conflicting views; it is uncertain whether the vessels are first affected or

*v. Bechterew. *Archiv. für Psychiatrie*, Vol. XXVIII, 1896, p. 742.

the neuroglia, and in many instances thickened vessels have been found in the sclerotic patches. By some, multiple sclerosis is considered a congenital proliferation of neuroglia.

The conclusions reached by Catola are that the distinctions between the different forms of multiple sclerosis are unreliable, and that syphilis can not be eliminated as a cause.

In the first case reported by him the sensory symptoms were more pronounced than is customary in the true multiple sclerosis. The patient had pains in the back, shooting pains and diminution of sensation in the lower limbs, and loss of stereognostic perception. The findings were: Thickening of the pia over the base of the brain and over the spinal cord with infiltration by lymphocytes and polynuclear cells, sclerotic plaques in brain and cord, sclerosis of all the vessels of the pia and spinal cord with some peri-vascular cellular infiltration. Secondary degeneration was absent. Catola thinks the syphilitic nature of these lesions is shown by the perivascular alteration. From the illustrations of this case many of the sclerotic areas appear to shade off gradually into the normal tissue.

In his second case sclerotic areas were found, and the vessels of the cord were thickened, but perivascular round cell infiltration and round cell infiltration of the pia seem to have been inconspicuous. It is stated that the perivascular spaces contained occasionally some round cells. Secondary degeneration was absent. In the summary of the case the vascular lesions are described as thickening and degeneration of the walls of the vessels. The author might well have taken more space to establish the syphilitic nature of these sclerotic plaques, as beyond a syphilitic infection the syphilitic character of the sclerotic areas is at least open to question.*

Nonne** in the second edition of his work on syphilis, having the date of 1909, says that multiple sclerosis in its typical symptom-complex is not caused by syphilis. The course of the syphilitic form is different and the typical symptoms of multiple sclerosis: scanning speech, rotatory nystagmus, intention tremor and the general tremor of trunk and head, are not observed in cerebro-spinal syphilis. Syphilis, in his opinion, certainly plays no part in multiple sclerosis. Schuster's clinical case he does not accept, but he acknowledges that the "formes frustes" may be difficult to distinguish clinically from cerebro-spinal syphilis.

Certain authors (Orlowsky, Thomas and Long***) have held that syphilis and multiple sclerosis have occurred in the same person. The possibility of the simultaneous existence of these two diseases in one nervous system must be acknowledged, but it is not a probability. The

*Catola. *Nouvelle Iconographie de la Salpêtrière*, Vol. XIX, 1906, p. 337.

**Nonne. *Syphilis und Nervensystem*. 1909.

***Orlowsky. *Neurologisches Centralblatt*, 1897. Thomas and Long. *Comptes rendus de la Soc. de Biologie*, 1899.

case of Thomas and Long is one in point and called forth a vigorous protest from Ladame,† who regarded it simply as an unusual example of spinal syphilis.

Oppenheim‡ expresses himself very forcibly and in his fifth edition of his text-book has not seen fit to alter his opinion that syphilis has nothing to do with multiple sclerosis, although syphilis may cause multiple foci of degeneration, as demonstrated by v. Bechterew, but he states that Catola has made it probable that syphilis may cause a disease related to multiple-sclerosis. Oppenheim's study of syphilis of the nervous system has been so extensive that his opinion demands respect.

Williamson* in his recent work states that: The disease has no relation to syphilis, calling attention, however, in describing certain anomalous syphilitic lesions, to the occurrence of cases resembling disseminated sclerosis in the evidence of multiplicity of lesions.

We might refer to the views of Gowers and other writers expressing doubt as to the relation of syphilis to multiple sclerosis, but with one or two exceptions we have confined our quotations to recent authors who have expressed an opinion on this subject.

The conclusions we have reached from our investigations of the case reported in this paper and other cases are:

(1) Syphilis may in rare instances produce a symptomatology indistinguishable from that of typical multiple sclerosis, and this without the formation of sclerotic plaques, but by the ordinary lesions of syphilis viz. arteritis and meningitis.

(2) Syphilis may produce sclerotic plaques in the spinal cord resembling those of multiple sclerosis, without producing the typical symptoms of this disease. These plaques have not the sharp definition seen in most cases of typical multiple sclerosis, and yet multiple sclerosis may exist without plaques sharply defined from the normal tissue. The syphilitic form of multiple sclerosis presents round cell infiltration of the pia and thickening of the blood vessels. Thickened vessels with a small amount of perivascular sclerosis will usually be found in certain regions without the formation of plaques, though plaques may be present at other levels of the cord. In some places slight neuroglial proliferation without thickened vessels may be detected, resembling in no way true plaque formation, but appearing more in the nature of slight diffuse secondary degeneration. Gumma also may occur in the brain. Secondary degeneration is more common in the syphilitic type, but does occur rarely in multiple sclerosis. Nerve fibers are not always completely degenerated in the syphilitic plaques. Careful and thorough examination will almost always, if not always, make a diagnosis possible between the lesions of syphilis and those of multiple sclerosis, even though they may have a decided superficial resemblance.

†Ladame. *Revue Neurologique*, Vol. 8, 1900, p. 66.

‡Oppenheim. *Lehrbuch der Nervenkrankheiten*, Fifth Edition, 1908.

*Williamson. *Diseases of the Spinal Cord*. 1908.

A RARE KIDNEY CASE.

By H. TUHOLSKE, M. D., LL.D., and W. M. ROBERTSON, M. D., of
St. Louis.

The case, which we have the honor of presenting, we believe to be exceedingly rare, if not unique. At any rate, according to the literature at my command, nothing exactly like it has ever been described. Permit me to review briefly the categories into which I desire to place the case and to state that I believe, because of its many peculiarities, it demands a place of its own.

According to Israël, of congenital anomalies of the kidney, the most important is aplasia,—the total absence of the kidney. He states that, in over 300 cases operated on by him, he never came across a single case of congenital absence of a kidney, but that he found one, incidentally, in a postmortem examination on a patient who had died of a phlegmonous inflammation of the leg. In the next division, congenital dystopia of the kidney, he says the organ is most frequently found in the pelvis. The congenital form of dystopia may be distinguished from the acquired form by an unusually low origin or termination of the renal vessels. Of this variety he reports three cases. With perfect propriety, there may be placed in this category the floating kidney due to a congenital long mesonephron. The following is an illustration of this variety. I was called to operate for an extrauterine pregnancy and found deep in the pelvis a large mass closely applied to the side of the uterus. Under an anesthetic, I was able to diagnose a two months uterine pregnancy and found in the pelvis a wedged-in, large kidney. After some manipulation, I was able to move the mass from the pelvis into the lower abdomen, recognized a floating kidney, which was without much difficulty put into its proper position. It was held there until after normal labor. Dr. E. W. Saunders attended the patient during her confinement. Another congenital variety is the horseshoe kidney; the lower poles may be fused, joined by a mass of renal tissue, lying across the lumbar part of the vertebral column, or displaced downward; they may be completely united, forming one disc-like mass, from which two ureters descend. In Gray's (DaCosta's) Anatomy, we read: "One or both kidneys may be misplaced congenitally and remain fixed in their abnormal positions. They are often misshapen. They may be situated higher or lower than normally or removed further from the spine than usual or may be displaced into the iliac fossa, over the sacro-iliac joint, on the promontory of the sacrum or into the pelvis between rectum and bladder or by the side of the uterus. Movable kidney cannot be distinguished from floating kidney with certainty until the kidney is exposed by incision. When

a displaced kidney becomes fixed, it is known as a dislocated or dystopic kidney."

In Watson-Cunningham's latest book on Genito-Urinary Diseases (Vol. 2), "Keyes tabulates the cases of abnormality of the kidneys which are mentioned in Morris' book with reference to the relative frequency with which the different forms of them occur, as follows:

Horseshoe kidney	16
Congenital uni-lateral atrophy.....	11
Misplaced kidneys	10
Lobulated kidneys, 4 bilateral.....	9
Malformed kidneys (bilateral).....	6
Fused kidney	1
	53

These cases occurred in 11,168 postmortem examinations." They classify abnormalities of the kidneys under the three headings:

- 1. Abnormalities of position.
- 2. Abnormalities of form.
- 3. Abnormalities of number.

(1) Under the first head, one instance is given in which both kidneys are reported to have been misplaced. The case is reported by Potherat. The two organs lay upon the brim of the pelvis. Acquired displacements. These are the so-called movable kidneys which become attached in abnormal places by inflammatory changes in the peri-renal tissue.

(2) Abnormalities of form. These are classified by Morris as follows: a, Variations in size; b, malformation of one or both kidneys without any junction or fusion of the organs.

(3) Fusion of the two kidneys, either in the form of a "horseshoe" kidney or some other irregular-shaped mass. The most important of the former class is congenital atrophy, because of its frequency as compared with any other of these deformities and owing to the failure of functional activity and efficiency involved in the condition, which may make nephrectomy impossible. Of class b, the lobulated kidney is the most frequent example. "Associated abnormalities of the blood vessels are the most essential thing to remember in connection with this sort of malformation, for they are common and may be a source of danger, when nephrotomy, nephrolithotomy or nephrectomy are performed."

3. Abnormalities of number. A. Single or unsymmetrical kidney, where one is entirely absent. B. Solitary or fused kidney, where the two are massed together. C. Imperfect development or atrophy of one kidney. D. Absence of both kidneys. E. Supernumerary kidneys.—Associated abnormalities. These are defects of the genital organs. In the male, the absence of the vas deferens, vesicula seminalis, ejaculatory duct; complete absence of the testis of the same side has been observed.

In the female, bifid uterus, duplication of the vagina, unicorn uterus, absence of the Fallopian tube, absence of the ovary, have all been reported.

Ransohoff, in his article on the kidneys and ureters in Keen's Surgery, 4th Vol., says: "Anomalies of position, form and number of the kidneys and ureters, which until recently possessed only scientific interest, are far from rare. Aristotle knew that life is compatible with one kidney. Instances of congenital absence of one kidney were described by Vesalius, Eustachius, Baubin and Haller. Congenital abnormalities may be divided into three groups; 1st, abnormalities of number; 2nd, abnormalities of form; and 3rd, abnormalities of position."

I have permitted myself to give this brief account of the abnormalities of the kidney by notable authorities, in order to throw into strong relief the case, which is the subject of this report and which seems to me to occupy a place *sui generis*.

The history of the case, as written by Dr. Robertson, in whose care the patient was, reads as follows: Mrs. Ch. R., jr., 20, married, born in the United States, came under my observation April 1st, 1908. Family history negative. Personal history; chicken pox, diphtheria, tonsillitis, left femoral hernia, menstruation scant and delayed. Married, June, 1907.

Present illness. Patient has always been in the best of health, with the exception of the above named diseases and what she designates as three attacks. The first attack occurred in July, 1907, and lasted three weeks; the second in September, 1907, lasting five weeks, and the third in February, 1908, lasting six weeks. These attacks came on suddenly without any premonitory symptoms, in the form of violent pain in the abdomen just left of the umbilicus. For two or three hours the pain was excruciating or, as she expressed it, so severe that she did not know what she was doing. It gradually diminished and a general pain and sensitiveness over the entire abdomen remained for several weeks, confining the patient to bed for a period of from three to six weeks. There was always nausea, sometimes vomiting and sometimes diarrhea. April 1st, 1908, when I first saw the patient, she was recovering from an attack of six weeks' duration. After a careful physical examination, the only thing found was an area the size of a man's hand, just below and to the left of the umbilicus. This area was painful on pressure and manipulation caused a feeling of nausea. There was rigidity of the left rectus muscle, but nothing abnormal could be detected in the abdomen. The patient's general condition was good and she was rapidly regaining her flesh and strength. The urine, which was frequently examined between April 1st and May 1st, always showed the following result: Cloudy, acid, specific gravity 1018, small amount of albumin, no sugar; microscopically, much pus, epithelium, and swarms of bacteria.

May 3rd. Double ureteral catheterization was made.

Phloridzine 0.01 injected hypodermatically.

Right Kidney.	Left Kidney.	Mixed.
Sugar reaction; 15 minutes; slightly red due to traumatism from catheter.	40 Minutes; faint, very pale, cloudy, resembling dirty water.	Cloudy.
Albumin, slight trace.	Albumin, marked.	Albumin, trace.
Blood.	None.	None.
Acid.	Neutral.	Acid.
Spec. Gr. 1024.	Spec. Grav. ?	Spec. Gr. 1018.
Micro. Ex. Red blood cells.	Micro. Ex. Much pus, swarms of bacteria.	Micro. Ex. Much pus, and bacteria.
Sugar 2½%.	Sugar 0.2%.	
Amount secured five times that of left.		

Patient saw Dr. Tuholske in consultation, late last spring. Physical examination revealed pelvic organs normal, nothing definite found in abdomen. Further observation advised.

X-ray picture taken by Dr. H. T. Wells showed nothing abnormal. The patient remained entirely well and free from any disturbance until October 27 when she again had a recurrence of pain at the same location. The pain was not severe and continuous, lasting only two days; a small swelling could be detected at a point where the pain had always been most intense. The swelling disappeared with the pain; at the same time the urine became very foul and contained a large quantity of thick stringy pus. An immediate operation was advised and the patient was operated on by Dr. Tuholske on November 18th.

Operation. Objects, exploration of the abdomen at the place of the recurring pain and examination of the left kidney, which, because of the findings in the examinations related, was believed to be in an advanced state of pyonephrosis.

Ether anesthesia. Incision 4½ inches long through the left rectus muscle, beginning an inch above the umbilicus. On opening the peritoneal cavity, many loops of small intestine presented, of pinkish color, very vascular, highly injected, no exudate, no matting of small intestines, no adhesions. Having protected the small intestine with gauze pads, I passed my hand to the left along the parietes, leaving the descending and sigmoid colon to the right found the kidney pouch empty, spleen in normal condition, small, readily recognized by its sharp margin and fissures. Exploration of the right side demonstrated absence of the right kidney from its usual location, liver not enlarged, gall bladder normal. After much searching, the right kidney was found lying upon the right lumbar vertebræ, partially upon the bodies,

partially upon the transverse processes, normal in size, no compensatory hypertrophy, one ureter. Further search for the other kidney seemed fruitless. The examination, however, had shown two ureteral openings in the bladder. The right kidney had but one ureter. A kidney may have several ureters, which may singly empty into the bladder, or may coalesce, fuse and open by one opening into the bladder; a single ureter, starting from the kidney as such, never bifurcates. There was, therefore, somewhere, another kidney. Turning the small intestine out of the cavity to the left, we traced the mesentery to its root, extending from the left side of the second lumbar vertebra, across the vertebral column to the right iliac fossa. On palpating along the root of the mesentery and the vertebral column, I thought I felt, upon the third and fourth lumbar vertebræ, just to the left of the median line, a rather narrow mass, over which the peritoneum was movable, perhaps about three inches in length, which felt like a sac or pouch, empty and drawn out. I incised the peritoneum over it to the extent of four inches, dissected back the anterior layer of the mesentery and found the empty sac, which we thought was the kidney. It was carefully peeled out by dry gauze dissection. The ureter was small and traced a short distance; the renal artery proved to be not a branch of the aorta but of the common iliac artery; there was little bleeding, the pedicle was ligated and severed. The sac then still held by two tubular prolongations on the upper side. They were traced until they appeared lost in the perirenal tissue; they were then cut off after clamping and ligating them. We then attempted, in view of the demonstrated infection of the sac, to drain retroperitoneally through the kidney pouch. It proved impossible. A split rubber tube of large caliber carrying a gauze drain was then inserted into the retro-peritoneal space as far as possible, and then carried to the parietes transperitoneally. To atone for this, we sewed the peritoneum over the drainage tube, making a closed peritoneal canal around the retro-peritoneal drain, and drained the adjacent territory by cigarette drain. The appendix, being found diseased, was removed through the original incision, which was then completely closed in the usual way.

Examination of specimen proved it to be an empty misshapen sac. The ureter and vessels could be readily distinguished. The sac was then cut open; there was no semblance of any kidney structure; it looked like the pale, gray, mucous membrane of the esophagus. The two tubular prolongations, in reality kidney lobules, communicated with the sac. Microscopic examination from immediately made frozen sections by Dr. Rotter, one of the hospital internes, showed distinct glomeruli, and settled every doubt as to the renal nature of the sac. Our assistant, Dr. Sandperl, also made a number of sections, in which Malpighian bodies were found. I examined the specimens and finally submitted them to Prof. Tiedemann, the pathologist of Washington University, who verified our macroscopic and microscopic findings.

The post-operative history presents some points of interest. Quantity of urine averaging 30 oz. per day; temperature and pulse fairly normal; patient bright and comfortable; so far no evidence of a constitutional effect of the absence of the internal kidney secretion. On the third day after the operation, patient had a chill and rise of temperature to 104 degrees, and pulse of 138; no peritonism, nausea, or abdominal distention. An examination showed the drainage tube too large for the opening in the parietes; the margins of the drain hole were necrotic. The tube was removed and a strip of iodoform gauze put to the bottom of the formed canal. No other trouble followed; temperature and pulse and general condition became normal within two days. There is considerable watery, flocculent drainage; fluid collected will separate into a super-incumbent clear fluid and a sediment, fibrous and purulent. The fluid has no urinous odor. If it be urine, it must come of some small remains of the lobules, remaining after the ligation and removal of the sac. It is small in quantity and will most likely stop soon.*

We dealt, then, with two dystopic kidneys, one of which occupied a most unusual location, one of the kidneys showing the embryonic lobulation, and besides that, congenital atrophy and abnormal vascular arrangement. The site from which it was removed, practically from between the two layers of the radix mesenterii, is unique.

465 North Taylor Avenue.

BIBLIOGRAPHY.

Gray-Da Costa: Anatomy.

Watson-Cunningham: Genito-Urinary Diseases.

Ransohof article in Keen's Surgery, 4th Vol.

Ribbert: Pathology.

Cunningham: Pathology.

Rokitanski: Pathology.

Morris: Diseases of the Kidneys.

*Addendum. Patient discharged well January 30th.

RECENT EXPERIENCES IN THE TREATMENT OF UTERINE
CANCER; WITH REVIEW OF 41 CASES
AND 27 OPERATIONS.

By FRED J. TAUSSIG, M. D., of St. Louis.

During the past four years I have had under my personal charge in private work and at the St. Louis Skin and Cancer Hospital forty-one cases of uterine cancer. Twenty-seven of them I operated on, and almost all the balance underwent some form of operative treatment at other hands before coming to me. I realize that compared to the large European clinics these are but meagre figures, nor do I want to do more than emphasize certain special points as illustrated by my experiences.

The essential in obtaining a large percentage of cures is early diagnosis. Special attention was paid to this point in taking histories to see first of all how long an interval elapsed between the onset of the first symptoms and the date of the first consultation; secondly, how many doctors failed to examine the patients at such consultation; and, thirdly, how many failed to recommend immediate radical operation.

Who can question the necessity of trying to educate women regarding the early symptoms of uterine cancer when he hears that of the 32 patients concerning whom accurate data were at hand, there was on the average an interval of over 7 months from the onset of the first symptoms, until the time of the first medical consultation. Seven months during which the patient had a blood-tinged discharge, and was satisfied with the belief that it was "change of life," or "inflammation of the womb!" Only three times did the patient go to the doctor within the first week or two of suspicious symptoms, and in two of these three cases that other factor in delay—the physician—prevented the possibility of cure. One doctor did not examine the patient; the other failed to make the correct diagnosis, or, at any rate, did not advise operation. I find that ten of these women can, to a large extent, attribute their death to the neglect or ignorance of the attending physician. Here are a few samples:

One doctor treated the case for 10 weeks as an ulcer;

Four doctors failed to make an examination;

"Phenomenal" Kraus tried to cure one by his phenomenal methods;

A delay of 3 months after the diagnosis was made, is recorded against another.

Amputation of the cervix and currettement in two early cases undoubtedly permitted the opportunity of complete removal to slip by, and so resulted in rapid recurrence and ultimate death.

In contrast to this carelessness, one case seems especially worthy of praise both on the part of the patient and the physician. The history was as follows:

Mrs. R., age 36, a patient of Dr. A. D. Erwin, of Fidelity, Ill., had always menstruated regularly. Her menstruation in July, 1908, was, however, unusually profuse and was accompanied by some clots, and an increased leucorrhœa. Within two weeks of this time she went to Dr. Erwin and the latter made an examination. He found a reddened, slightly bleeding spot in one corner of the lacerated cervix, and suspecting the possibility of a carcinoma, brought her to town to see me. It required the microscopic examination of an excised piece positively to establish the diagnosis. A radical panhysterectomy was done and the examination of the pathologist showed that apparently the disease was still very superficial. The probability of cure in this case is very great, and must in a large measure be attributed to the watchfulness of the family physician.

How great is the neglect of both patient and family practitioner toward aiding the early recognition of cancer is again evidenced by the percentage of operable cases. Of the thirty-eight cases in my charge, only nine were operable, and operative indications were set so as to include any patient in whom there was the slightest chance of permanent relief. Of these nine, one was found to be really inoperable only after the operation was almost finished; two others refused operation, leaving six operable cases. As far as the parametral involvement was concerned those cases were still included as operable in which there was some mobility of the cervix, or where the finger could be passed between the cancerous infiltration and the pelvic wall. Out of twenty-three cases in which the location of the parametral involvement was accurately noted, I found both sides equally involved seven times, the right side more strongly in two, and the left side more strongly in 14 instances. This striking preponderance of left-sided involvement is probably to a certain extent chance but it would be interesting to note if other statistics showed a similar marked difference.

The importance of cystoscopy in determining the question of operability was brought out by Zangemeister and others. Such a cystoscopic examination was made in fifteen patients. In almost half of them, there were found direct outgrowths of carcinoma in the base of the bladder. In a few I found the typical formation of folds and pockets at the point of beginning cancerous invasion due to the fixation of the bladder mucosa at these places. In the remaining the cystoscopic picture was normal. The bullous oedema described by some writers I was unable to see in my series. Once I found folds cystoscopically but I decided to do a radical operation in spite of this fact. On dissecting between bladder and uterus I found the muscular coat firmly adherent and finally had to resect a portion of the bladder wall before completing the operation. The value of cystoscopic examinations has in the

past few months been again emphasized in the review of seventy-five cases by Hannes.

I will not repeat my reasons for preferring the Wertheim panhysterectomy in cases of cancer of the cervix. They were presented in a paper read before the St. Louis Medical Society six years ago (Nov. 27, 1902).

At that time little, if anything, was known of the operation in St. Louis. It has been with considerable satisfaction that as a pupil of Prof. Wertheim, and an enthusiastic supporter of the operation, I have watched the progress the operation has made here since that time. Besides my own work (Figs. 1 and 2), it has been my privilege to assist a number of surgeons and thus to demonstrate points in the technique to them. The evidence of the past six years from Wertheim's clinic, now reaching a total of over four hundred operative cases, corroborated by almost all the large clinics of Europe, is strongly in favor of this operation.

Of the seven patients upon whom I performed the Wertheim operation, two died. One of these was the case already mentioned in which I had to cut through cancerous tissue in order to complete the hysterectomy. This was an inoperable case and can hardly be laid against the operation but rather against the operator in trying to go too far in his operative indications. The patient died of sepsis on the fifth day, the infection doubtless spreading from the cancer itself. In self defense I only wish to add that the pitiable existence of these cancer patients leads one to go to any extreme for a possible cure. The other mortality can be more rightly attributed to the operation, although it was one of those accidents that might occur with any protracted anesthesia. The operation was a most difficult one involving a resection of the base of the bladder, and one ureter in a woman weighing close to three hundred pounds (Fig. 3). The operation lasted two hours and forty-five minutes, the patient being in the Trendelenburg position most of that time. The evening of the operation a hemiplegia was noted, which persisted and was accompanied by localized necrosis in the skin of the affected side. Dr. W. W. Graves, who was kind enough to examine the patient for me, on the fifth day after operation made a diagnosis of thrombosis in the internal capsule. Locally, in spite of the bladder plastic, there were no signs of peritonitis or urine leakage. The patient sat up out of bed for a short time on the tenth and eleventh day, but on the twelfth day incontinence of feces and urine of central origin developed and on the fourteenth day she rather suddenly died. No general autopsy was allowed but locally in the pelvis the ureter and bladder were found well healed with no evidence of suppuration. The death, therefore, was caused solely by the cerebral complications. The three factors, prolonged narcosis, Trendelenburg posture, and unusual obesity, contributed to the occurrence of this extremely rare complication. To my knowledge no other such hemiplegia following this form of panhysterectomy has been reported.

Of late I have preferred not to expose the ureter as the first step in the operation but only after tying off both ovarian arteries, and cutting



Figure 1.—(Private Case.) Early cancer of the cervix showing extensive removal of cellular tissue, especially on the right side (left side of picture). The ureter in this case lay in the groove between the uterine vein (short) and uterine artery (long). Diagnosis could be made positively only by the microscope. Operation Dec. 16, 1908. Recovery.

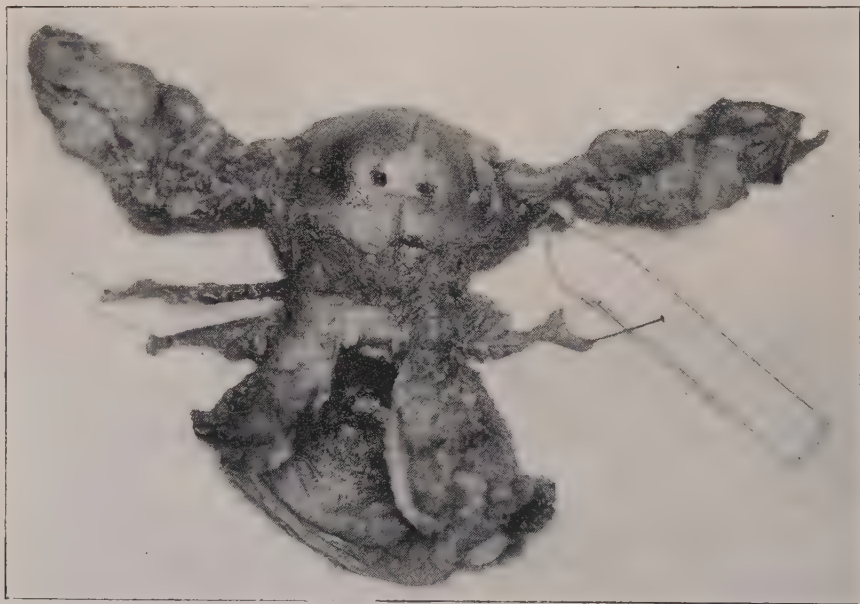


Figure 2.—(Skin and Cancer Hospital.) Advanced cancer of the cervix with beginning infiltration of left parametrium. Extensive removal of cellular tissue and enlarged iliac lymph-glands on left side. A piece has been cut away to show ulcerated cervical crater, previously excochleated. Operation October 16, 1908. Recovery.

down to the clear space in the broad ligament. Special care must be taken not to denude the ureter of its coat of nutrient blood vessels for fear of subsequent necrosis. In one of my cases such a ureteral necrosis with resulting fistula developed on the ninth day and persisted in spite of treatment so that I finally advised a nephrectomy for its relief. The fistula, however, closed spontaneously $3\frac{1}{2}$ months after operation. Weibel, of Wertheim's clinic, reports such a late spontaneous closure as not at all rare. Out of four hundred cases he found that ureteral necrosis developed twenty-four times, or in six per cent. of the total number. Practically all, he says, healed spontaneously between the third and twelfth week. My patient, by the way, an old woman of 72 years, who had had cancer for two years before operation, is now (over two and one-half years after the operation) (Fig. 4) still free from any recurrence.

At the meeting of the American Gynecological Society at Washington one year ago, I presented arguments against the routine removal of both ovaries in cancer of the cervix where the patient is under 40 years old. Most operators would pursue such a course in uterine fibroids. Why should it be different in cervical cancer? An exhaustive review of the literature showed that out of the many thousands of operable cases no case in which the ovary was involved could be found. My theoretical conviction on this subject found practical application in a case operated three months ago, a beginning carcinoma in a woman 36 years old. I found that leaving one ovary did not in any way interfere with the technique of the Wertheim operation. The cellular tissue could be removed just as well and my patient has had no such premature menopause disturbances as might otherwise have resulted. There is as much reason to remove the appendix in every such case as the ovary and the latter at least serves some useful function.

Oozing is one of the most disagreeable of the operative difficulties encountered. It often delays the operation and yet, if not checked, predisposes to septic infection. Such cases I believe had better be drained. For a time some operators preferred not to drain. But where the possibility of a ureteral necrosis is present in almost any case, it would seem safer as a rule not to close the vagina entirely. At a recent German gynecological meeting a report from Bumm's clinic in the Charité of Berlin showed that they were again draining all their cases.

In the after treatment of the cases I will only take up one point, that of post-operative urine retention with resulting cystitis. This subject is one I made the occasion of a special Arbeit while an assistant in Wertheim's Hospital in 1901. At that time we could find no relief for this harassing complication. To Dr. Emil Ries of Chicago, I believe, we owe the suggestion of getting patients out of bed early for the purpose of voiding urine. Where this is possible, it is almost invariably true that they can void without trouble. When catheterization has to be resorted to for several days, we cannot possibly depend solely upon asepsis

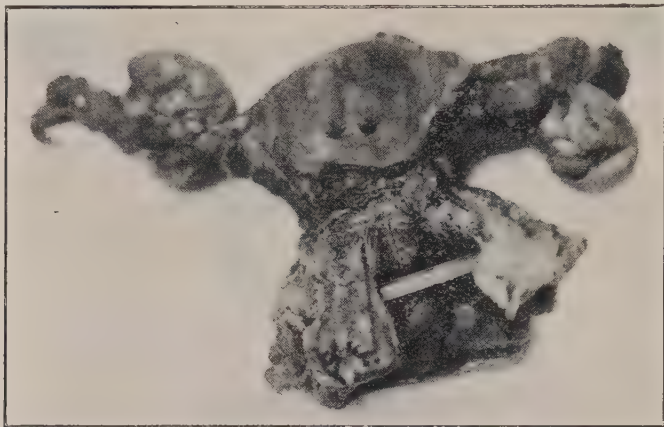


Figure 3.—(Skin and Cancer Hospital.) Very advanced cancer of cervix, involving muscular coat of bladder and both parametria. Cut open to show large crater. Bladder and right ureter resected. Operation July 30, 1908. Death from cerebral embolus on 14th day after operation.



Figure 4.—(Skin and Cancer Hospital.) Cancer of the cervix associated with fibroid of the fundus. Parametria free. Operation May 25, 1906. Ureteral necrosis fistula closed spontaneously. Patient recovered and is now still free from recurrence.

for the prevention of cystitis. Pyogenic bacteria are certain to get into the bladder and there proliferate unless antiseptics are employed. We can give Urotropin by mouth wherever the stomach will tolerate it. Boric acid irrigations of one pint after each catheterization have given good results, but of late I have preferred the daily instillation of 10 to 15 cc. of a 5 per cent. protargol, or 40 per cent. argyrol, solution as a prophylactic measure. The post operative cystitis, which formerly was one of the bug-bears of the radical abdominal operation, is therefore no longer to be dreaded. Not in every instance would I employ the abdominal operation however. In very fat women the extended vaginal operation is preferable. Cancer of the body must also be attacked from the vagina, since the mortality of a simple vaginal hysterectomy is a great deal lower than that of abdominal hysterectomy and the cellular tissue is rarely involved in this form of cancer. Two cases of adenocarcinoma of the body removed vaginally were among my number. They demonstrate the necessity of watching closely every case of endometritis in older women. I saw one patient at her home in consultation with Dr. Schuchat on October 10, 1907. She had entered the menopause two years previously, but in March, 1907, a persistent bleeding began which was only checked after two months by a thorough curettage. The microscopic examination at this time revealed no carcinoma. In September another attack of bleeding began and continued until my visit in October. I curetted and found positive evidences of adenocarcinoma in some of the pieces examined. Hysterectomy was recommended but it was not until January, 1908, that the patient agreed to have it done. During these three months the bleeding had ceased. On opening the uterus it was found that the adenocarcinoma was limited to a small polyp in the fundus (Fig. 5). On re-examination, October 26, 1908, 10 months later, the patient was free from recurrence. The question whether occasionally an adenocarcinoma of the body can be cured by curettement as suggested by Vassmer three years ago, might fairly be raised in this case. I do not wish to be understood as recommending curettement, only it is of interest to note how long the disease may be localized entirely to the mucosa. And yet it is never possible to say just when metastasis even to distant organs may take place in these early adenocarcinomata of the body. I recall an autopsy in Vienna in which just such a small polyp was associated with diffuse peritoneal carcinosis. And this year I saw in consultation a patient in whom beginning cancer of the body was attended with a much larger metastasis in the bladder.

In six of the cases in this series the cancer was recurrent after hysterectomy. Four patients were clearly in a hopeless condition, when seen by me. One, referred to me by Dr. Kelly, of Baltimore, had just recovered from a secondary laparotomy done by him in which the affected carcinomatous lymph glands were found closely adherent to the iliac veins and their removal consequently abandoned. In this list also belongs a patient whom Dr. Gellhorn had operated on by the abdominal

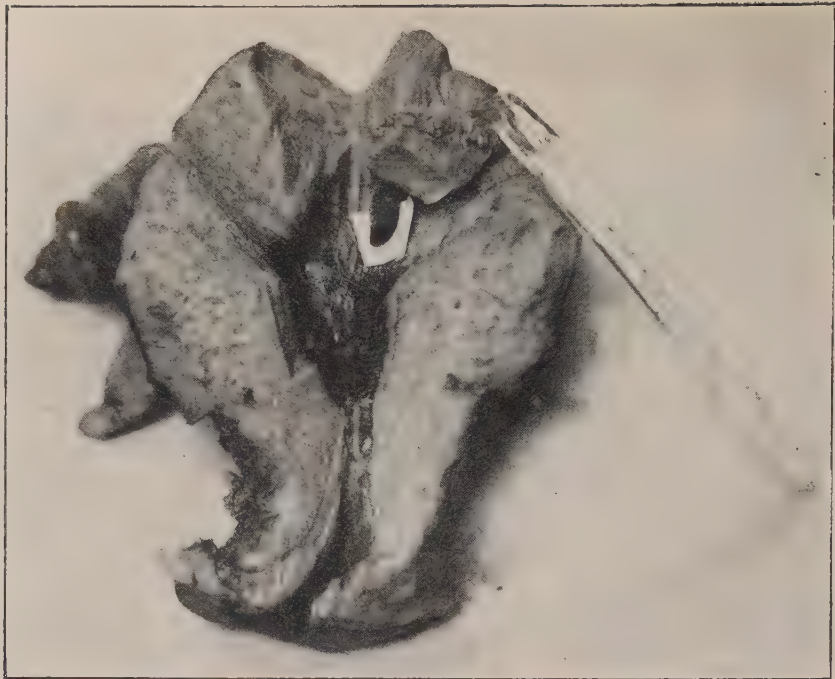


Figure 5.—(Private Case.) Early adeno-carcinoma of the fundus removed by vaginal hysterectomy. Operation January 14, 1908. Recovery. A bit of paper is slipped under the carcinomatous polyp in the fundus.



Figure 6.—(Skin and Cancer Hospital.) Autopsy specimen of an inoperable cancer of the cervix, showing hydronephrosis and hydro-ureter of one side, and almost normal kidney on the other. Almost the entire bladder and half of the vagina is cut away, showing cancerous crater involving entire uterus. The short line to the right represents point of entrance of the ureter into this crater (uretero-vaginal fistula). The longer line to the left represents the remaining portion of the bladder.

method in November, 1906. The patient was kept under constant observation and eight months later, during Dr. Gellhorn's absence from the city, I felt a suspicious mass, the size of a walnut, in the region of the left internal iliac vessels. A week later I did an exploratory secondary operation. Since there were, beside this mass of glands on the left side, a nodule the size of an acorn in the right sacral region and an enlarged gland at the point of division of the aorta, I desisted from any attempt at operative removal. The patient gained fifteen pounds in weight after this laparotomy but finally died nine months later.

So many of my cases were inoperable, that I had better opportunity to test the various palliative measures than the more radical procedures. Of x -ray treatment and the trypsin treatment a trial was made in a series of cases but except for occasional suggestive benefit I could see no improvement. Beside this, three methods of treatment were employed:

- (1) Curettement alone.
- (2) Curettement and thermo-cauterization.
- (3) Curettement and acetone treatment.

Curettement alone gives only the most temporary relief. When the base of the growth is thoroughly cauterized results seems to be better. Some surgeons, Lomer for instance, found cases that were practically held in abeyance by such repeated thermo-cauterizations. Personally I found that the necrotic zone thus formed gave rise invariably to a moderate degree of infection, and when the dead tissue was cast off, there lay beneath it a granulating, usually freely bleeding, surface. The discharge was often very profuse after such operations. The best results by a good deal were obtained by the use of acetone. I took up this method with a feeling of skepticism, fearing that it too would fail as others had done. I believe we owe a great deal to Dr. Gellhorn for having suggested this method. I feel sure that in the next few years it will become the generally accepted palliative treatment. It alleviates to a very great extent the bleeding and offensive discharge and inasmuch as the pain is occasionally due to an associated septic infection it will at times help the pain. I do not find that it materially retards the inward growth of the cancer. What it does is to limit the amount of superficial necrosis and bleeding. Out of fourteen patients on whom I could try this method for some time, six were greatly benefited and three slightly benefited. Of the remaining five in whom no improvement took place three were almost moribund, that is, they died within one month of the first time the treatment was tried. Most patients should not have acetone treatments at too short intervals. Treatments every 3 to 4 days seem to give the best results. Extreme care must be taken not to get even a drop of the acetone on the external genitals, as it causes the most intense burning which often does not subside for hours.

Of the later complications of inoperable carcinoma one of the most annoying is the occurrence of vesico-vaginal and uretero-vaginal fistulæ.

In the present series there were five such cases. In no instance did a recto-vaginal fistula develop. Nothing in the way of treatment can be employed to stop the urinary incontinence. In the opposite condition of urine retention through pressure of the cancerous mass, we occasionally have to do palliative operations. Of the three instances of such urethral involvement, I operated upon two. In one patient, I was compelled to cauterize a large hole in the bladder to permit the urine to escape. The patient died some time later of an ascending urinary infection. The other patient I operated on three weeks ago. She was referred to me by Dr. Chapman of Charleston, Mo., with the history that for the past five weeks she had to be catheterized three times a day. I found an inoperable cervical cancer with a metastasis on the anterior vaginal wall compressing the urethra. A plastic with the removal of half of the urethra and the larger part of the vaginal metastasis resulted favorably. She can now void urine freely and with good control. I do not anticipate, however, that the operation will give more than temporary relief.

With such a large percentage of inoperable cases it is not surprising that over one-half are to my certain knowledge now dead. In thirteen of these patients who died, the exact date of onset of the first symptoms could be learned. From this it appears that the average duration of this disease, where treated only by palliative measures, is one year and seven months. The patient who lived longest was a woman who two years ago, when Prof. Wertheim was in this city, was examined by him at my request, with a view to a radical operation. The doctor found beginning involvement of the left iliac glands and advised against operation. She died only one month ago, or two years after being declared hopelessly inoperable and four years after the onset of the disease.

A word in conclusion about the six autopsies performed on my cases by Dr. McConnell at the Skin and Cancer Hospital. As nearly as one could tell four died from urinary obstruction (see Fig. 6) and two from general debility. Metastases in other organs found only once, in the lung and the liver. As to the lymphatics, in three no involvement was found outside the pelvis, in two the aortic and inguinal glands were involved, and in one the inguinal glands alone. Only enlarged lymph nodes were examined.

To emphasize once more: The blame for the late recognition of uterine cancer rests mostly on the woman herself. In about ninety per cent. of the cases she did not at once consult a physician. In about one-third of the cases the carelessness and ignorance of the physician was partly or wholly responsible for the delay.

Only about 20 per cent. of my cases were operable.

The cystoscope is a valuable aid in determining the question of operability.

The radical panhysterectomy of Wertheim is the best operation for cervical cancer, except in fat women.

Ureteral fistulæ due to necrosis will usually heal spontaneously.

Post-operative cystitis can usually be prevented by getting patients up early.

Of palliative methods the best, as tested in fourteen cases, is the acetone treatment after excochleation.

Urethral compression in the late stages sometimes necessitates operative relief.

Death occurs on an average about one year and seven months after the onset of first symptoms.

The autopsies show the most frequent cause of death to be uremia due to ureteral compression.

REMARKS ON ATHLETICS FOR HEALTH.

By G. FRANK LYDSTON, M. D.,Professor of Genito-Urinary Surgery, University of Illinois, Chicago.

There has been a decided tendency on the part of the profession of recent years to condemn athletics as injurious: Benjamin Ward Richardson long ago called attention to the results of over-strain: His observations on what is now familiar as myocarditis have become a classic. As is usual with the profession it has gone to extremes in condemnation.

Although in many instances athletics have proven injurious, there is no justice in the growing popular sentiment that they are generally dangerous. The only source of danger lies in the fallacious and pernicious notion that athletics consists of mere muscle-building and preparation for severe competitive strain. The man who absurdly trains for the purpose of cultivating an enormous muscular development has no conception of the true function of physical culture and usually injures himself in greater or less degree. The fact that some such foolish ones live to advanced age does not controvert this. Aside from the question of injury, what sense is there in the performance of the man of hypertrophied muscle, whose claims to athletic accomplishment consist in his mere ability to put up a dumb bell of 150 pounds weight with either hand? Let a man of this sort enter the lists for a contest involving endurance and agility and he is but a weakling; more than this, he is likely to die years before his time. I remember a remark made by my old gymnastic teacher, Prof. Wood of New York, that well expressed the situation. Pointing to a plaster cast of an enormous biceps that hung upon the wall, the veteran trainer said: "That arm cost its owner his life. Man is not a horse, he was not made for the work that is necessary to develop such muscles." That Sandow has thus far proved an exception to the rule the whole world knows.

It is a fact well known to athletes, that a man with large bunchy muscles—usually cultivated by heavy work on the various gymnasium apparatus—is invariably joint and muscle-bound. Give an expert boxer or wrestler his choice of opponents for a match, and he will select the strong, heavy and bunchy-muscled man, with perfect confidence that his own smooth, well-laid muscle and hardy fiber will win. To the non-expert the man with the hypertrophied muscle appears a sure winner. The recent wrestling match between Gotch and Hackenschmidt for the world's championship was a splendid illustration of my point. "Hack," of the horse muscle, was worn out by the suppler-muscled Gotch.

The varieties of athletic exercise may best be divided into two principal classes, viz.: (1), those which are conducive to muscular develop-

ment and the acquirement of strength; (2), those which tend chiefly to improve the quality of muscle fiber and the acquirement of endurance and agility. One class of exercise increases bulk and the other improves quality. The proportion of each required by the athlete varies greatly with the individual. Obviously, it would be absurd to prescribe the same line of work to a slender man of 130 pounds weight, as to a well-muscled subject weighing 180 pounds. Short-limbed and long-limbed men require different training. Much depends upon the requirements of each case; the several indications in different cases being:

1st. Muscle development, general or specialized; *i. e.*, general in or only specialized in those whose entire muscular development is defective; general and specialized in those whose bodies are asymmetrically developed.

2nd. Increase in weight.

3rd. Decrease of weight and acquirement of agility and endurance.

4th. Increase of pulmonary capacity.

Every beginner should have the advice of an expert as to the amount and character of exercise necessary. It would be impossible for me at this juncture to do more than hint at the several indications. In a general way the rule should be that all exercise should fall short of fatigue. An exhausted muscle is a weakened muscle, and incidentally, the nervous system becomes exhausted and necessarily irritable. Cheerful companionship is essential—athletics for health must not be converted into hard work. The man who wishes to obtain the best results from the gymnasium must play boy for the nonce. Exercise just before or after a meal should be avoided. Special effort should be made to induce perspiration, especially if the subject be fat and plethoric. Thin and spare subjects can accomplish this by drinking hot water during exercise; fat persons should avoid fluids and swathe themselves in heavy clothing or a "sweater."

A good system for the average amateur is the following: An hour is allotted for the work and divided as follows, *viz.*: (1) Ten minutes for the dumb bells and clubs, the former weighing from 1½ to 8 pounds—the lighter the better—and the latter from 2 to 5 pounds. (2) Three minutes rest, during which the subject should walk about the room to avoid chilling. (3) Five minutes with light pulleys. (4) One minute rest. (5) Five minutes upon the rowing machine. (6) One minute rest. (7) Five minutes with the wrist pulley. (8) One minute rest. (9) Five minutes with the ladders, taking great care not to over strain. (10) Five minutes rest. (11) Five minutes with the suspended rings or horizontal bar. (12) Finish the hour by boxing, fencing, running, wrestling or hand-ball, as the opportunity offers. (13) A cold sponge or shower-bath while perspiring freely, followed by a brisk toweling.

Fat subjects should train down by worrying play rather than by muscular strain. Boxing, wrestling, fencing and hand-ball will worry off fat faster than anything I know of.

It would, of course, be impossible for the beginner to carry out such a plan as that prescribed: he should devote but a very short time to each exercise and take at least two months to work up to the amount of exercise outlined. A tepid bath and rub may be taken at first if the subject be weakly.

Persons with narrow, contracted chests should work chiefly with the bells and rings.

In a general way the best results will be obtained from exercise upon alternate days. Regularity is very essential. Strain against dead weight, as in lifting, should be avoided. Stimulants and tobacco are inimical to proper training. In a general way competitive feats are unwise—the primal object of training—health—should be kept in view. Pushing up heavy bells and lifting heavy weights hypertrophy and dilate the heart and cause pulmonary emphysema. The athlete who over-trains finds himself at 40 years of age unable to continue his hard training; as a consequence his big heart falls to disuse, and disuse means decay, *i. e.*, cardiac muscle degeneration.

The most powerful pugilist America ever produced—John Dwyer of Brooklyn—quit the squared circle and entered his brother's counting room as clerk. The lung of the prize ring was unnecessary at the desk; was placed in comparative rest, and degenerated, degeneration in this instance meaning phthisis and death within a year. Frank Glover, a mighty heavyweight, followed the same road.

Richardson was correct, when he spoke of "broken heart" from strain, as many a man has found to his cost—correct in more ways than one, for a valve may really snap under powerful exertion.

Athletics for health is safe. Athletics for prowess and superiority may be dangerous. It is to be hoped that the correct principles of training may be inculcated in the minds of the American youth—both boys and girls—with the result that the generation of fifty years hence will redeem the race. Athletics of a professional type may become scarce, because normally strong and powerful men will have ceased to be a novelty.

THE VALUE OF CONSERVATISM IN PELVIC SURGERY WHEN DEALING WITH PYOSALPINX.

By GORDON A. BEEDLE, M. D., of Kansas City, Mo.

In presenting a paper under the above title, I shall not attempt to embrace the associated etiology and pathology; but preferably shall present the advisability of removing pelvic organs found in company with commonly termed gonorrheal pus tubes demanding surgical relief.

First, the removal of the uterus; second, removal of the ovaries; third, plastic efforts at preservation of the tubes.

Eliminating the vaginal and urethral infection, I consider the uterine mucosa first becomes involved to various stages of degree; thus transmitting the infection to the tubes, which in turn may infect the ovary through proximity to a ruptured graffian follicle.

The endometritis in a great majority of cases has subsided by the time suppurations in the tubes occur; again there are cases which continue in chronic state varying in severity due frequently to interference of drainage through a cramped retro or antifixion or through more extensive infection of the mucosa. When the microorganism invades the tube there results a long irregular infected mucus sinus. This inflammatory process results in an early closure of the tubal ends and consequent impairment of drainage.

The varying extent of involvement coupled with position of uterus, previous impairment which the reproductive organs may have received, with general susceptibility or resisting power of the tissue may unquestionably account for the variance of symptoms that we meet: Such as pain, which varies greatly in grade of severity and frequency. Temperature and head pains are not always present; dysmenorrhœa and leucorrhœa may vary greatly in degree and amount, frequently the tubal process is active with no leucorrhœal discharge; possibly the less varying symptoms excluding the findings on examination are frequent attacks of pain in ovarian region often associated with clotted and increased menstrual flows—attacks becoming more frequent and painful.

The pus, in the majority of these cases when operated upon, has been found sterile. The tubal inflammation may extend from weeks to years. It may develop active stages and again become dormant for varying periods of time; the more persistent symptoms of pelvic inflammation are unquestionably due to disease of the Fallopian tubes.

In considering the removal of the uterus in all cases, let us review a few reasons for such advice as extended by a great many.

First, the uterus is of no farther use; second, the uterus may still be infected with resulting trouble; third, distressing menstrual symptoms following removal of tubes and ovaries; fourth, the possibility of the uterus becoming malignant; fifth, sexual life unaffected by removal of uterus; sixth, drainage is better when uterus is removed.

In agreeing to the first point, that the uterus is useless after the ovaries and tubes are removed, we take for granted the uterus has only one function, that of a receptacle for the development of the fetus; unquestionably, nature intended the maintenance of position of abdominal and pelvic organs through suspension, however, we must concede that to a great extent the suspension in general acts in unity and that counter pressure of one organ in proximity to another plays an important part.

Removal of the uterus leaves a space to be filled by sagging intestines pressing down upon the united peritoneal sac; thus, I believe the uterus if left in normal position through the additional aid of fixation or any advisable operation for such purpose, does materially assist in supporting its adjacent organs, lessening the danger of a sagging bowel or bladder wall.

It is doubtful if the uterus plays a part toward the enjoyment of coitus, while unquestionably it does not embrace the chief seat of sensation, it is certainly closely allied, as clinical evidence so frequently indicates. In a large per cent. of my cases of tubo-ovarian exsection without removing the uterus according to the statement of the patient, sexual intercourse has become more enjoyable. This, however, opens the question as to the true value of such statements made by these patients; I have in mind at least three cases of complete removal of the uterus, tubes and ovaries, each of whom claim positively that their sexual enjoyment has improved since their operation—one case of two years' standing and report of recent date. This may be due to retarded or gradual loss of sensation which in some cases require time to gradually efface, however, the majority of such cases under my observation have had an almost immediate loss of sexual desire.

The irregular returning of menstrual flow when the uterus is left in, may vary from an occasional slight discharge, regular or irregular in its cycle, to those coming frequently, associated with great pain and alarming in quantity of blood passed. Such a condition, I have on my hands at present, and clearly demonstrates misjudged conservatism in this particular instance. The remedy is easy but to be permitted to apply it, is not so easy. Had I removed the uterus when I removed the tubes and ovaries, the extra hazzard associated with the operation and the other possible objectionable points that might ensue would have been a trifle compared with the relief of the present symptoms. Dilation, curettage, and general uterine treatment in these cases are generally discouraging.

Malignancy following in the unremoved uterus, I believe, is hardly an argument worthy of advancement, as clinical history has not demon-

strated any increased susceptibility of the uterus toward cancer after removal of the appendages. Such a condition can be easily conceivable, however, when an old infected organ with possibly extensive scar tissue resulting from old cervical lacerations with their well known irritating etiology, is left unremoved, the principle of removal of the uterus in all cases as a general procedure does away with the possibility of such a complication later, such a general procedure should be followed in all cases of advanced involvement. I doubt if any one would hesitate to include the removal of the uterus when the present symptoms demonstrate in addition to other findings an enlarged scarred cervix accompanied with a profuse leucorrhœal discharge, frequent increasing menstrual flows with present and past history of dysmenorrhœa, the past history of dysmenorrhœa frequently dating from puberty but becoming decidedly more aggravated since organ became infected, on section the uterus appearing enlarged and inflamed. Such a uterus unquestionably will continue to produce severe and distressing symptoms almost invariably yielding poorly to all lines of treatment and frequently made worse through repeated efforts with the curette.

Advantage of drainage with the uterus removed, I consider a minor point, drainage through the peritoneal cul-de-sac being as fully effective giving the advantage of gravity to the lowest dependent point.

The tubes unlike the uterus and ovary seem to possess the most desirable fertility for the development and maintenance of this type of infection, consequently receiving the greater degree of damage. A small lumen with inhibited drainage and increased tissue susceptibility to the microorganism, has placed the tubes chances for repair beyond physical help as a rule, long before the incision is made. Successful efforts at preservation in these cases are few and demonstration of their continued performance as transporters of the ovum much less frequent, while attempts at same in a great majority of cases have been failures; I believe there is only one safe way to deal with the same, that is extirpation or exsection of the entire tube including its origin in the uterine tissue.

I question if a great many of our unfavorable post operative symptoms placed to the credit of the remaining uterus are not due chiefly to the infected stump of the tubes remaining after the amputation method of removing same.

It has never appeared rational to me that old tubes containing pus could safely be reconstructed to properly perform their functions. We have no certain way of telling at operation the full extent of damage done the lumen, or the extent of structural deformity resulting if it should safely heal. Drainage of the tube through the vagina when the position of tube would facilitate same, and where enucleation would prove hazardous to the patient, seems to me the only proper time to leave such a tube with the patient. In case of the ovary associated with pus tube, as in all other cases excluding malignancy, one point which should bear decided consideration and not embracing the unquestionable

probability of the ovary being the true site of sexual appetite, is the theory of the value of the ovarian secretion. If the blood is enhanced by an important product through ovarian activity, which product if eliminated proves a great detriment to the nervous system than increased importance is added to the true surgical instinct of anatomical preservation, one ovary or a section of one should if possible be spared in every case, thus maintaining in a degree its internal secretion, however, as all degrees of ovarian involvement are seen in these cases from the lightly attached fimbriæ to extensive adhesions, inflammation or suppuration but one consideration can guide the judgment, and that is our appreciation of the pathological extent through vision and touch while operating. The more accurate that judgment, the greater safety in attempted preservation.

Conservatism in these cases is always an increased responsibility on the surgeon, requiring a thorough painstaking diagnosis previous to operation and a clear appreciation of the extent of the disease when the abdomen is open.

The age of the woman, her mental attitude toward the knowledge of her lost organs with absence of their functions, the varying degree of nervous disturbance from a produced menopause extending from comparatively no disturbance to those of an advanced mental degree, and the possibility of unnecessarily forcing sacrifices upon the patient through misjudged radicalism, all have to be met for consideration if we abide by the dictum of general total extirpation.

Each case should be studied and handled independently upon its own merits. While many cases through their associated involvement of both ovaries and uterus being so extensively diseased that but one avenue is left to pursue, the great majority present that type chiefly confined to the Fallopian tubes, with the frimbriæ glued to the ovary with occasionally one ovary more or less abscessed, the uterus but slightly enlarged with no special indication of present or previously apparent incurable state in such cases there seems every reason why we should preserve a portion if not one entire ovary and the uterus, after removal of the tubal sac at its origin in the uterine wall. (I have three such cases in mind at present—operated upon during the last year and results have been perfect according to their own expression, in each instance sexual pleasure has greatly improved, menstruation is normal, weight has increased, no neurotic symptoms present, but in every way presenting a normal physical condition.)

In addition I might say, while it is not within the scope of this paper to deal minutely with the various degrees of involvement we meet on opening the abdomen in these cases, I will say that by no means do all present an inviting task after the introduction of the exploring finger. There is a certain degree of restricted motility of the organs with a certain resistance of the adhesions which speak volumes at the first touch. The size of the abscess-sacs with their area of agglutination each

presenting an individual picture, while in general assuming similar characteristics.

I would refer briefly to a case which in my opinion represents that class of advanced involvement wherein enucleation should never be attempted.

Three years ago Mrs. R., presenting a history of gonorrheal infection, ten years previously, with repeated attacks of apparent localized peritonitis, suffering during those attacks with great pain in ovarian region. No chills and slight temperature. Attacks lasting from ten to twelve days, becoming more frequent and painful, urination and defecation painful, associated menstrual disorder. Up and around between attacks, however, never free from pain.

Examination.—Uterus outlined and slightly movable. Mass on either side with extreme tenderness on palpation. On opening abdomen found mass involving tubes and ovaries densely plastered low in pelvis, immovable extending from wall to wall, seemingly one united abscess. This was opened through the cul-de-sac, one hand remaining on mass in pelvis. Drainage into vagina through the opening in the cul-de-sac and the other hand compressing the walls within pelvis, I was able to explore the cavity which consisted of two departments with a partition part of the way down the center. Abdomen was closed by an assistant while I freely packed cavity and vagina. Patient continued to drain freely for about three weeks through large glass drain which I substituted for the gauze after its removal. Drainage gradually ceased after removal of tube and she was in apparent good health two years later. Since that time I have not heard from her.

I cite this case briefly, to bring out the point of the advantage of this procedure in such type of cases over the more radical effort of nucleation which if attempted would invariably hazard the life of the patient.

428 Altman Building.

THE APPARATUS USED BY THE GREEKS AND ROMANS
IN THE SETTING OF FRACTURES AND THE
REDUCTION OF DISLOCATIONS.

By JOHN S. MILNE, General Practitioner in Hartlepool (a smoky town
on the Northeast Coast of England).

(CONTINUED FROM JANUARY ISSUE.)

Hippocrates says that instead of the perineal extension band the upright perineal prop may be used.

Of dislocation inwards, Paulus Ægineta says that if it be not reduced after trying with the patient on his back and using the upright perineal prop:

"The erect piece of wood (Fig. 18) is to be removed, and two other pieces, i. e., the perineal prop of wood fixed on either side, like posts, not more than a foot in length, and let another piece of wood be adapted to them like the step of a ladder, so that the figure of the three pieces of wood may resemble the Greek letter H, the middle piece of wood being fixed a little below the tops.

Then, the man being laid on the sound side, we bring the sound leg between the posts, underneath the piece of wood corresponding to the step of a ladder, while the injured one is brought above it, so that the head of the thigh is upon it; but a folded garment is to be first wrapped about it to prevent the thigh from being bruised. Then another board of moderate breadth and of such a length as to extend from the head of the thigh to the ankle, is to be bound along the inner side of the thigh to the ankle.

Then extension being made, either by the pestles mentioned in treating of the dislocation of the vertebra or some such instrument, the leg is to be pulled downwards along the board which is fastened to it, so that by the force exerted on it the head of the thigh-bone may return to its proper place."

The Ambè. We have seen that in using the scamnum (Fig. 19) for the reduction of dislocation inwards of the thigh, Paulus Ægineta, (also Hippocrates, from whom Paul is copying), recommends us to fix a piece of board along the inside of the thigh and leg, to assist in levering the head of the bone into position. A board applied in this way was also used in reducing the dislocations of the shoulder, either by levering the board over the back of a chair or the lower half of a door, or by using it in conjunction with some specially constructed machine, such as that of Fabrus, with which we shall meet presently.



FIG. 18. The scamnum in dislocation inwards of the thigh. Counterextension maintained by the horizontal bar.

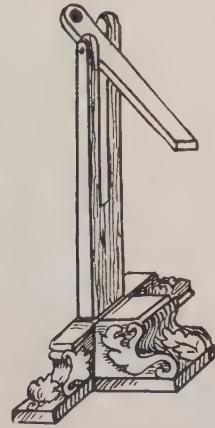


FIG. 19. Shows the ambé, fitted into a specially prepared upright supported on an ornamented base. After Scultetus.

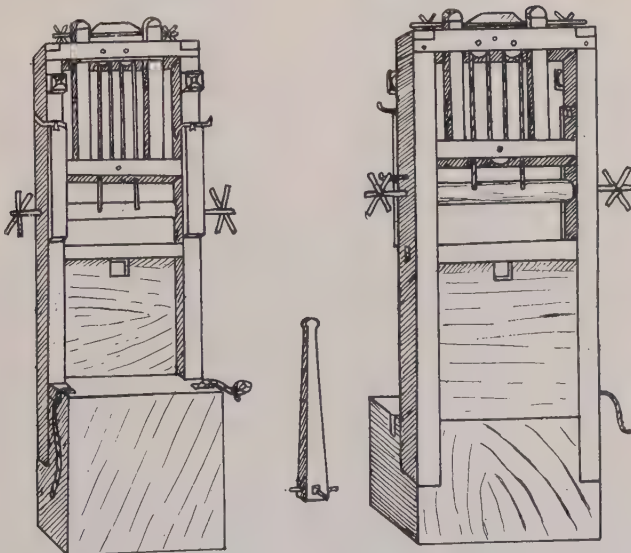


FIG. 19A. Anterior and posterior views of the machine of Fabrus. (After Vidius.) Between them is an ambé which has at its axillary end a bolt to fit into the top cross-bar of the machine.

The power varies only with the ratio of the diameter of the axle to length of crank. The pulleys do not multiply power.

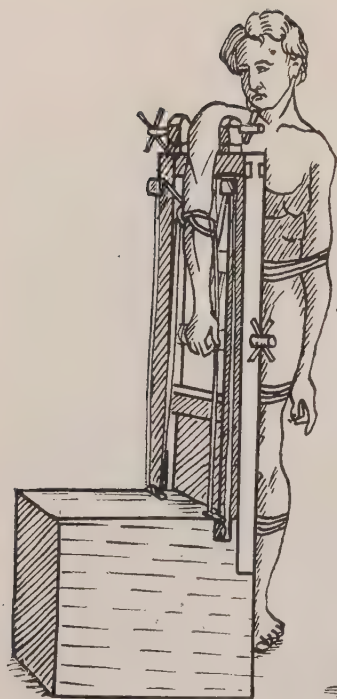
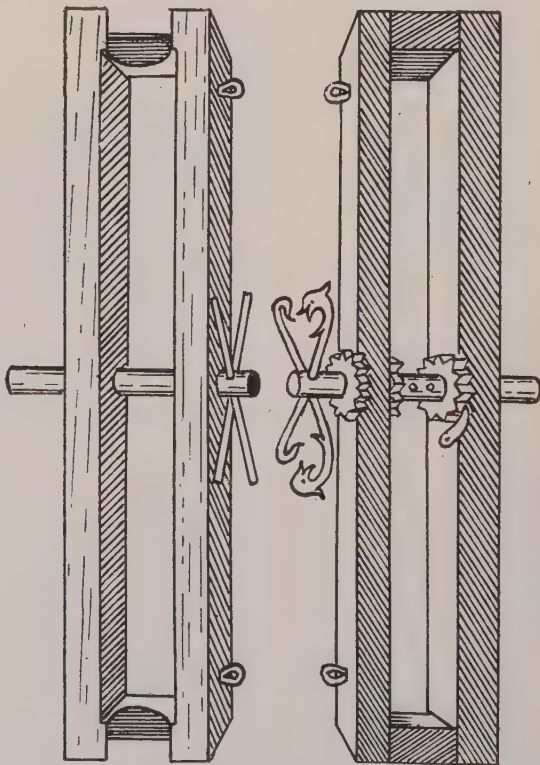


FIG. 20. Patient with arm arranged in the machine of Fabrus for reduction of dislocation of shoulder. The thongs from a clove hitch applied above the elbow are taken over two pulleys above and two pulleys below so that the clove hitch cannot move up nor down, and the elbow is thus maintained at the same level. (N. B. These thongs are not connected to the axle in any way.) Patient strapped so that he cannot resist the treatment.



FIG. 20A. Setting a fractured humerus in the manner described by Hippocrates. After Vidius.



FIGS. 21 AND 22. Portable winch, known as the plinthium of Nileus, for affixing to a ladder.

A board especially prepared for this purpose had a rounded enlargement on its extremity, to assist in pushing the head of the humerus outwards.

The name of this enlargement ($\acute{\alpha}\mu\beta\eta$) gradually became transferred to the whole instrument. The "ambè" was well known in England till well into the last century.

The time of its disappearance in England may be fixed by a passage in Adams' edition of Hippocrates (vol. ii, p. 575) where he says: "Of late years the ambè has fallen completely into disuse, and none of the various modifications of it are to be seen except in the cabinets of the curious." (This was in 1849.)

Sculptetus shows us an ambè mounted in a specially prepared upright for use in the surgery (Fig. 19).

The ambè is thus described by Hippocrates:

"We must get a piece of wood five, or at least four, inches broad, two inches in thickness, or thinner, and two cubits in length, or a little less, and its extremity should be rounded, and made very narrow and very slender there, and it should have a slightly projecting edge ($\acute{\alpha}\mu\beta\eta$) on its round extremity—not on the part that is to meet the chest, but the head of the humerus.

"A piece of soft shawl should be glued to the end of the piece of wood so as to give the least pain on pressure.

"Having pushed the end of this piece of wood as far in as possible, between the ribs and the head of the humerus, the whole arm is to be stretched along this piece of wood, and is to be bound round at the arm, the forearm, and the wrist, so that it may be particularly well secured, but great pains should be taken that this piece of wood should be introduced as far into the armpit as possible, and that it is carried past the head of the humerus.

"Then a crossbeam is to be securely fixed between two pillars, and afterwards the arm, with the piece of wood attached to it, is to be brought over this crossbeam so that the arm may be on one side of it and the body on the other and then the arm with the piece of wood is to be forced down. The crossbeam is to be fixed so high that the rest of the body is raised on tiptoe.

"This is by far the most powerful method of effecting the reduction of the shoulder for thus one operates with the lever on the most approved principles."

Celsus (Bk. VII, ch. xv) describes the ambè thus:

"A wooden spattle is necessary if the body is rather big and the tendons are rather strong, and it should be of the thickness of two fingers and in length reach from the axilla to the fingers. And at the top of it there is a head rounded and gently hollowed out, so as to receive a part of the head of the humerus. In it there are two holes at three places separated from each other by an interval, and in these soft thongs are inserted.

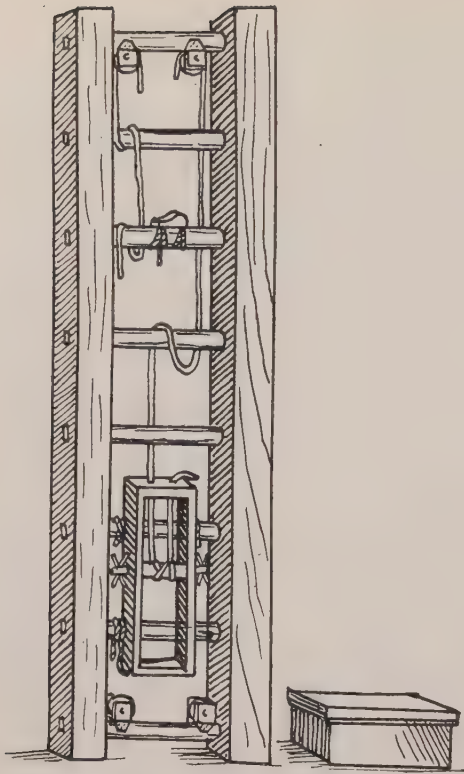


FIG. 24. Ladder arranged as a machine for the reduction of dislocations. A Plinthium of Nileus has been tied on the lower part of it and below this are two pulleys for the converting of the direction of extension. A similar pair of pulleys have been tied on the top step of the ladder.



FIG. 25. Reduction of shoulder by ladder with Plinthium of Nileus. Extension having been made, the operator is pulling out the head of the humerus by a thong. The assistant is bearing down on the patient's neck.

"This spatule, wound round with a bandage in order that it may not injure by contact, is so applied to the arm at the axilla that its upper end is put under the top of the axilla; then by its thongs it is bound to the arm, at one place a little below the head of the humerus, at another a little above the elbow, at a third above the hand—indeed the spaces and holes have been arranged for this purpose.

"The arm, tied in this manner, is passed over the step of a poultry ladder at such a height that the man cannot stand and while the body is let down on one side, the arm is made tense on the other, and thus it is brought about that the head of the humerus—impelled into position by the end of the board—is reduced, sometimes audibly, sometimes not so.

"Many other methods can be learnt by reading Hippocrates alone but not one has stood the test of experience better."

The Machine of Fabrus. Heliodorus describes the construction of this machine, and its application for the reduction of dislocations of the humerus. Probably it is a machine used by artisans for some such purpose as the elevation of large blocks of stone, as it seems unlikely that such a large and cumbrous machine should have been especially invented for the single purpose of reducing the dislocation of one joint. Two views of the machine are given, (Fig. 19A).

It consists, as will be seen, of two upright posts supported on a heavy base, while inside the posts a frame carrying two upright bars is raised and depressed by the rotation of an axle acting on a system of pulleys. Through the heads of the upright bars there passes another axle carrying a padded projection which is placed in the armpit.

The arm is strapped to an ambè in the manner described already and is passed over the axle, the patient standing on tiptoe outside the machine. (Fig. 20.)

The arm is maintained at one level by thongs affixed by a clove hitch above the elbow and passing over pulleys above and below. On rotating the lower axle the frame is pushed upwards, forcing the head of the bone into position, while at the same time an assistant forces the head of the bone outwards by a half turn of the upper axle, causing the padded projection to push outwards.

Extemporized Apparatus and Substitutes. Having now described the apparatus which was used by practitioners settled permanently in populous places, we may consider the substitutes for these which were used by surgeons on their travels, or under other circumstances where the major apparatus was unavailable.

Hippocrates says we must always be ready to make use of whatever happens to be at hand.

He says that dislocation inwards at the hip may be reduced in the following manner.

It is a good, proper and natural mode of procedure, and has something of display in it, if anyone take delight in such ostentatious methods.



FIG. 26. Reduction of the ulna.



FIG. 27. Reduction of both bones at the elbow

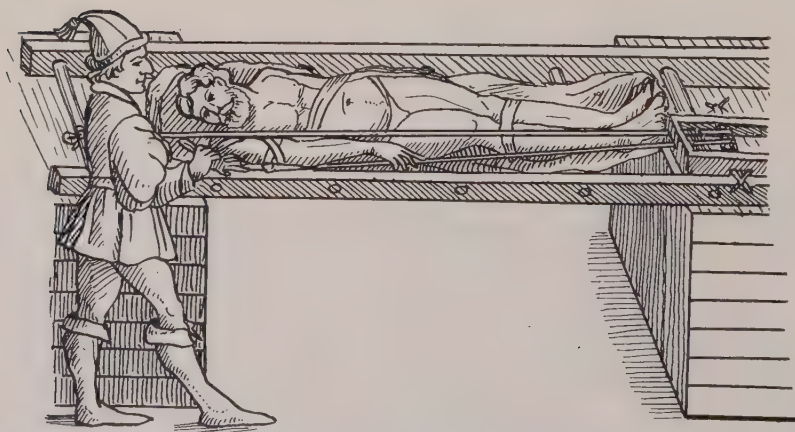


FIG. 28. Reduction of the shoulder with the ladder in the horizontal position. Operator pulling head of humerus outwards with a thong.

The patient is to be suspended from a crossbeam by the feet tied together by a strong, soft and broad cord.

The feet are to be about four inches or less from each other and a broad and soft leather collar also connected with the crossbeam, is to be put on above the knees, and the affected leg should be so extended as to be two inches higher than the other.

The head should be about two cubits from the ground and the arm should be stretched along the sides, and bound with something soft.

All these preparations should be made while he is lying on his back so that he may be suspended for as short a time as possible.

When the patient is suspended a person properly instructed and not weak, having introduced his arm between his thighs is to place his forearm between the perineum and the dislocated head of the femur, and then, having joined the other hand to the one thus passed through the thighs, he is to stand by the side of the suspended patient and suddenly suspend and swing himself in the air as perpendicularly as possible.

In fracture of the humerus, if the bone be set while the elbow is extended, the muscles of the arm will assume a different position when the elbow is flexed.

To set it in the flexed position, therefore, suspend a piece of wood like the handle of a spade from the roof by two chains one at each end.

Place the patient's arm over this, so that the bar lies in the axilla.

Over the flexed forearm pass a shawl to which attach a great weight, so as to produce extension on the lower fragment of the humerus and thus reduce the deformity.

Apply the waxed bandages and compresses in this position.

The Pestle. Of reduction of the shoulder by means of the pestle,—an article for the preparation of food to be found in every Greek home,—Hippocrates says:

"Those who accomplish the reduction by forcibly bending it over a pestle operate in a manner which is nearly natural. The pestle should be wrapped in a soft shawl for thus it will be less slippery.

"It should be forced between the ribs and the head of the humerus. And if the pestle be short the patient should be seated on something, so that his arm can with difficulty pass over the pestle.

"But, for the most part, the pestle should be longer, so that the patient, when standing, may be almost suspended by it. And then the arm and forearm should be stretched along the pestle while some person secures the opposite side of the body by throwing the arms round the neck near the clavicle."

Hesiod (*Works and Days*, 1, 421) says that the length of the culinary pestle was three cubits.

From other passages in Hippocrates it would seem that any pestle-like rod may be indicated. The word Celsus uses means a staff.

Hippocrates describes several methods of improvising a scamnum.

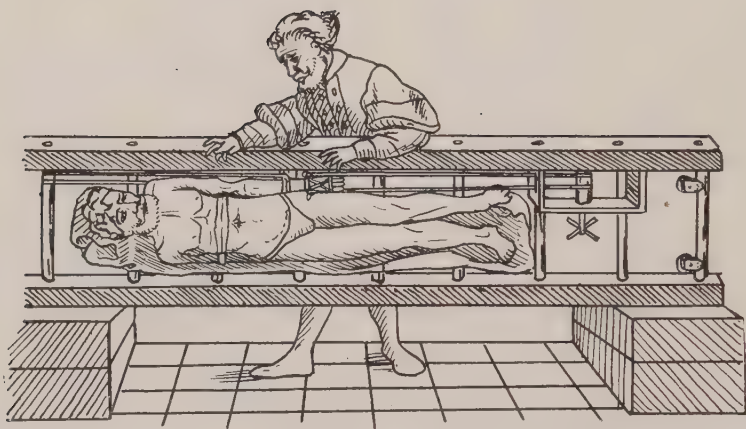


FIG. 29. Reduction of the wrist. The ladder is probably meant to be lying flat, but in the figure it is shown tilted up on its side in order to bring the parts into view.

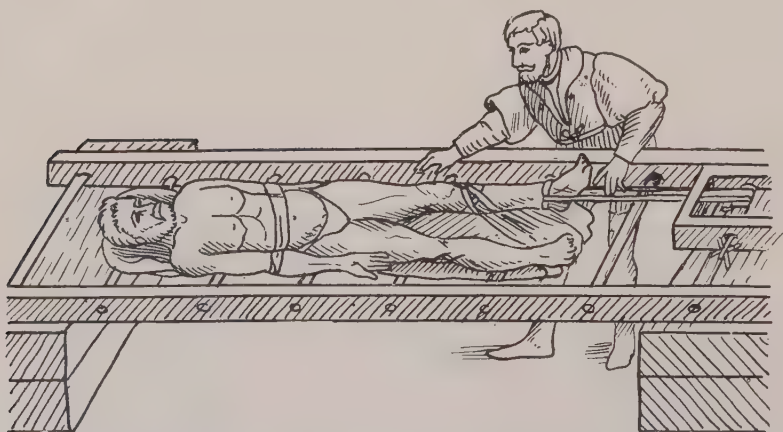


FIG. 30. Reduction of the dislocated astragalus with the ladder in the horizontal position.

Any strong couch may be used as the bench, and extension and counter-extension may be produced by poles levered against boards fixed to the feet of the couch, thongs being attached to the middle of the poles.

Or instead of boards attached to the feet of the couch a ladder may be placed below the couch and the poles levered against the steps of the ladder.

If, along with either of these methods it were desired to extemporize a lever to press down a hump back, this could be done by driving a post into the ground alongside the couch and making a hole in the post for the end of the lever to play in.

Or the couch could be drawn alongside a wall and a hole made in the wall for the end of the lever.

In fracture-dislocation of the foot the extension might be made as follows:

Having fixed in the ground the nave of a wheel or some such object, something soft is to be bound round the foot.

Next, some soft thongs are to be attached to the foot and the ends of the thongs are to be fixed to a pestle or similar pole. The end of the pole is to be fixed in the nave.

On pulling back the pole, the foot is extended, while counter extension is made by pulling on the shoulders and the ham of the patient.

Or, counterextension can be made by driving a pole into the ground to act as a perineal support.

Ladder. A ladder was an object which was always at hand and of service in the reduction of dislocations.

In treating of the ambè we showed one use of the ladder, namely to reduce the shoulder by levering the arm over a step. For other dislocations portable fittings could be applied to generate power for extension and to convert the direction of motion.

Thus, two pulleys might be affixed to the top steps and two to the lower, and a portable winch fitted to the lower part of the ladder.

One simple form of winch for this purpose was called the *plinthium of Nileus*.

It consisted merely of a small frame carrying an axle, with or without a ratchet. (Figs. 21, 22.)

Fig. 24 shows a ladder fitted up with pulleys at its top and bottom and a *plinthium of Nileus* below.

Fig. 25 shows the reduction of the humerus by a ladder so fitted. The ladder having been fixed in the ground, the arm has been passed over a step of the ladder and the *plinthium of Nileus* has tightened the thongs attached to the arm till the patient is almost suspended.

The operator is pulling the head of the humerus outwards by means of a fillet, while an assistant is pressing down the shoulders of the patient.

Fig. 26 shows the reduction of the ulna at the elbow, and Fig. 27 the reduction of both bones dislocated together. Fig. 28 shows the reduc-

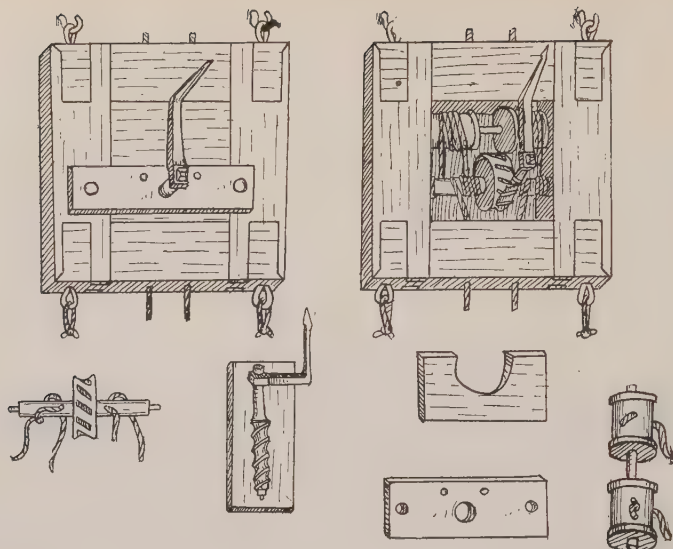


FIG. 31. Glossocomum of Nymphodorus. Two views, one showing it closed and ready for use, the other with the lid removed, to show the principle. A crank drives a shaft with a worm thread on it. The threads of the worm engage in notches in a drum. Ropes pass from the axle on which the cogged wheel drum is carried, to drums carried on a second axle. Below are parts of the machine showing its structure and also the method of fixing the rope ends. After Vidius. Power, ONE TURN OF AXLE only moves the cogged wheel one notch—great power therefore varying with length of crank. Power still further increased by lower axle being smaller than drums of upper.

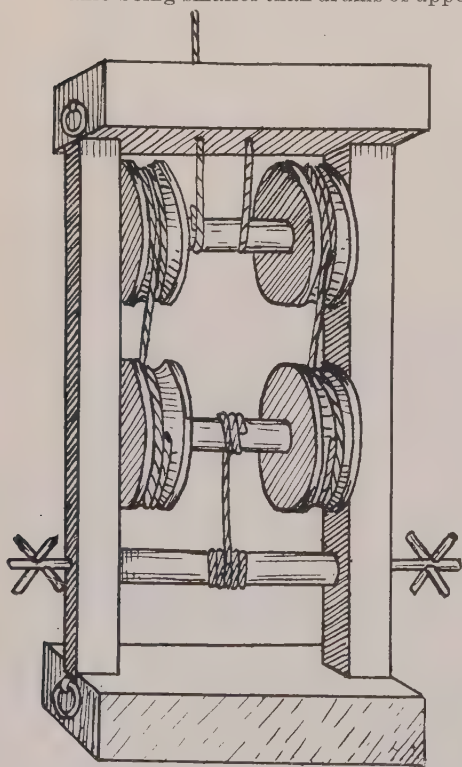


FIG. 32. Trispastum of Apelles or Archimedes with the sides removed to show the works. The power depends on ratio of diameter of axle to length of crank in this figure. But if the lower drums were made smaller than upper as in Fig. 31, power would be further augmented accordingly.

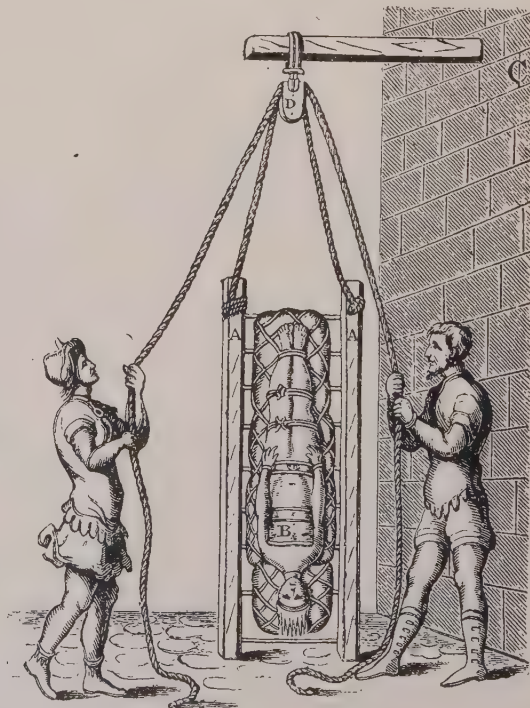


FIG. 33. Suecussion on a ladder for dislocation of the spine. The patient is bound to the ladder by the lower part of the body, the upper hanging free. The ladder is raised by the pulleys and suddenly allowed to drop.

tion of the shoulder. The ladder is placed horizontally in this case, the ends being supported on a pile of wood or stone blocks.

The patient is bound on the ladder, and while extension is made on the arm, the head of the humerus is pulled outwards by a thong passed inside it.

Fig. 29 shows the reduction of the wrist, extension and counterextension are made by thongs affixed below and above the wrist by clove-hitches; while Fig. 30 shows the reduction of the ankle on similar principles.

(In the case of the wrist the ladder is shown tilted up on its side, in order to bring the parts into view.)

A portable winch of more powerful principle was the Glossocomum of Nymphodorus. It is shown in Fig. 31; first, as it appeared when closed and ready for use, and next, with one of the shutters removed to show its internal construction.

It will be seen to consist of a crank, the rotation of which causes a worm on it to turn a cogged wheel.

Round the axle of the cog wheel are ropes passing to another axle, the circumference of which is increased by drums so as to multiply the power, after the manner shown in the figure. One whole turn of axle moves cogged wheel forward one cog. Some of the inner details of the winch are shown below. Another portable winch was the Trispastum of Appelles or of Archimedes. Its construction is shown in Fig. 32, which shows the sides removed to display the working. In actual use, however, it was closed in like the last winch.

Reduction by Means of Inflating a Bladder. In describing the reduction of the dislocation of the spine Hippocrates says that he has tried to reduce the deformity by inflating a bladder affixed to a bronze tube and placed under the spine. The experiment, however, did not succeed for when the man was fairly extended the bladder yielded, and the air could not be forced into it, and besides, the hump of the patient was apt to slip off the bladder.

Hippocrates says he has written this expressly, for it is a valuable piece of knowledge to learn what things have been tried and have proved ineffectual, and wherefore they did not succeed.

Again he says that reduction by the bladder was celebrated in the case of the hip joint.

It is not a powerful method. It should be placed between the thighs uninflated so that it may be carried as far up in the perineum as possible, and the thighs, beginning at the patella, are to be bound round with a swathe, as far up as the middle of the thigh, and then a bronze pipe is to be introduced into one of the loose feet of the bladder and air forced into it. The patient is to lie on his side with the injured limb uppermost.

From this description it would seem that the bladder had consisted of some small skin such as that of a kid.

Succussion, or Suspension on a Ladder. This was done for dislocation of the spine, and usually to astonish the mob, Hippocrates says, although so far as he was aware, the method had never straightened anybody yet. To the mob, however, things of this sort are wonderful, and they never give a thought as to their utility.

A ladder was padded with leather, and on this the patient was laid on his back. The ankles were tied to the ladder by soft strong bands.

The arms were bound to the sides of the patient but not to the ladder.

By means of a rope or ropes affixed to the lower end of the ladder (Fig. 33) it was raised along the gable of a high house or a high tower, or the mast of a ship fixed in the ground. The ropes should run over a pulley or a winch.

For the sake of completeness we may conclude with a short account of the materials used for the treatment of congenital clubfoot by Hippocrates.

Most cases are remediable. After pulling and pushing the parts into position they are to be retained with cerate made with a full proportion of resin, with compresses or pads similar to those described in the treatment of fractures, and soft bandages applied in sufficient quantity but not too tight. The foot should appear to incline a little outwards.

A sole of leather not very hard, or of lead, is to be bound on as you are about to finish the bandaging, not in contact with the skin. The bandaging is to be carried up to the top of the calf, and the bandages are to be finished by stitching. A small shoe of lead is to be bound on externally to the bandaging, having the same shape as the Chian slippers had. This, however, should not be necessary. Thus this method requires neither cutting (tenotomy) nor burning nor any other complex means, for such cases yield sooner to treatment than one would believe. However they are to be fairly mastered only by time and not until the body has grown up in the natural shape, and then recourse is to be had to a shoe.

The most suitable are the buskins, which derive their name from traveling through mud, for this sort of shoe does not yield to the foot but the foot yields to it. A shoe shaped like the Cretan is also suitable.

(As Galen, the great admirer and annotator of Hippocrates, confesses that he is unable to give an exact account of either the Chian slippers, the buskins, or the Cretan shoes, we may leave it to individual imagination to conjecture their appearance.)

MEDICAL AND SURGICAL PROGRESS.

VACCINE THERAPY OF PNEUMONIA.

A REVIEW OF RECENT LITERATURE.

WILLIAM ENGELBACH, M. D.

1. VACCINE THERAPY AND OPSONIC TREATMENT.—Second Edition.—Allen.
2. VACCINE THERAPY OF PNEUMONIA.—MacDonald (Pathological Society, London, January 17, 1905).
3. VACCINE THERAPY OF PNEUMONIA.—Butler Harris (*Practitioner*, May, 1908).
4. VACCINE THERAPY OF PNEUMONIA.—Coleman (Royal Academy of Medicine, March 2, 1906).
5. VACCINE THERAPY OF PNEUMOCOCCUS INFECTIONS OF THE EYE.—Brisco and Williams (*Practitioner*, May, 1908).
6. VACCINE THERAPY OF PNEUMOCOCCUS OF THE EYE.—Jowers (*Practitioner*, September, 1908).

Allen's method of preparing the vaccine is as follows: Human blood-agar is the best culture medium. Successive strokes either upon blood-agar slopes or plates usually produce a pure culture at the first attempt, especially from an empyema or otitis media, and in eye cases if the eye has been well washed out previously with sterilized saline. In pneumococcal endocarditis cultures must be made from the blood in the same way as for streptococci, with the additional insemination of a tube of agar, by allowing a few drops of the blood to run over its sloped surface. From sputum its recovery is more difficult, and is best done by inserting a small piece of sputum, which has been well washed several times in sterile saline solution, under the skin of a rabbit or mouse. In about forty-eight hours the animal will die with numerous capsulated cocci throughout its blood. Some of the heart-blood is then taken, with aseptic precautions, and allowed to run over the surface of tubes of sloped agar. In twenty-four hours numerous small, transparent colonies, like drops of dew, appear. So rapidly does this organism lose its virulence, and therefore its value for the preparation of a vaccine, that even in four or five days after isolation from an animal's body its pathogenicity is already diminished. It is, therefore, especially necessary in the case of this organism that a first subculture should be employed for a vaccine. As in the case of the gonococcus, the cultures should be made on the human blood-agar and incubated for between eighteen and twenty-four hours at 37° C. MacDonald studied the index in eight cases of pneumonia, and found that while the temperature is rising and during the fastigium the opsonic index is below normal, whereas at

the onset of the crisis there is a sudden rise, even as high as 1.6. Subsequent observations have shown that in very severe cases failure of the index to rise in this manner at the crisis is a matter of grave importance, and that such cases usually die.

Recent attempts have been made in America to treat pneumonia as a routine by injection of a vaccine, and considerable success has been claimed. The temperature is said to fall several degrees within twenty-four hours; the crisis is precipitated within three or four days, and the convalescence is rapid and complete. The whole duration of the disease when so treated is claimed to lie within a fortnight.

Butler Harris refers to four cases of pneumonia which failed to immunize themselves, and responded at once to the introduction of a vaccine made from the patient's own pneumococcus—details of the cases are not given. Favorable experiences of the routine injection by 25,000,000 organisms of the cases of acute pneumonia have been communicated. Unresolved pneumonia would appear to be particularly suitable for vaccine therapy. Coleman recorded such a case treated by inoculation of pneumococcal vaccine with very satisfactory results. On the thirty-eighth day of attack the pneumococcic index was 0.6; 46,500,000 cocci were therefore given. There was no disturbance, local or general. Next day the index was 0.69, and the physical signs were those of pneumonia of five or six days' standing. Six days after injection the index was 1.17 and the patient was much better. Ten days after injection the index was 0.89, and 46,500,000 were again given. Three days after second injection the index was 1.13. Eleven days after the second injection the patient was in excellent health, and for six weeks subsequently the index was observed to be slightly over normal. Briscoe and Williams subjected four such cases, which were not improving under ordinary treatment, to vaccine therapy. Cultures were made from the patient's own organisms and the guidance of the opsonic index was utilized. Case 1 was in a child aged one and a half years. A month after admission a consolidation at the right base was still unresolved. The index being 0.9, an injection of 20,000,000 cocci was given. A slight rise of temperature resulted, and the child was not so well for eighteen hours. He then began to improve in weight and general condition. Two days after the first injection the index was 1.2. Four days after the first injection there were only a few crepitations and slight bronchial breathing. Five days after the first injection the index was 1.3. Six days after the first injection there were crepitations, but no bronchial breathing. Nine days after the first injection the index was 1.2. Eleven days after the first injection 10,000,000 cocci were given without any ill effect, and next day index was 1.4. Two days after the second injection crepitations were audible only at lower and posterior aspect of the lobe. Five days after the second injection 10,000,000 cocci were given, and next day the chest was clear.

Case two was in a child aged one year and nine months, and was readmitted two months after having been admitted for right basal and later apical consolidation. Turbid fluid was found, and one injection of 20,000,000 given. The child steadily got worse, and died in a few days. Post-mortem, loculated septic pericarditis with universal mediastinitis, collapse and consolidation of the right lung was found. The presence of the old-standing septic pericarditis may be held to have contra-indicated vaccine therapy, and the case is hardly a fair one upon which to base any conclusion.

Case 3 was in a child of two, in whom the temperature remained intermittent after drainage of an empyema. Two injections, the first of 10,000,000, the second of 40,000,000, eight days after the first were given. Measles, unfortunately, complicated the case, but the authors state that the child's general condition was improved, and the temperature slightly reduced as a result of the inoculations.

Case 4 was one of right basal consolidation, with a history of one week, in a man of forty-four. Although the temperature soon fell to normal, the local signs failed to clear up. Sixty million organisms were therefore injected on about the twenty-second day, and again thirteen days later. After the first injection the moist sounds cleared up entirely in the next three days, and the sputum diminished two days after the second injection. There was no bronchial breathing, but the breath sounds were a little harsh. His general and mental condition, previously bad, improved rapidly. The authors' conclusions are that "in these more or less acute cases the improvement in general condition is quite a marked feature, and it appears to be an important factor in the question of continuing the treatment. The injection produces a stimulating effect, and the patients always seem to be more cheerful afterwards. An increase of weight occurs rapidly in the case of children." They also produced decided improvement in two cases of a chronic nature in adults, the history in each dating back ten months. Doses of 50,000,000 and 100,000,000 were employed.

In empyema good results may be anticipated when vaccine therapy is directed against the organisms found to be present. In only a certain percentage are pneumococci alone present; in some cases they are absent altogether; in most there is a mixed infection with streptococci, staphylococci, *Bacillus pyocyaneus*, *Bacillus coli communis*, etc., and in these a mixed vaccine will have to be employed in conjunction with such measures as surgical experience indicates. Improvement may be slow, and prolonged treatment necessary.

A number of cases have now been reported in which the pneumococcus has been found to be responsible for metritis and pyosalpinx, and in a few instances for a resultant peritonitis and systemic infection. The possibility of this might well be borne in mind by obstetricians and abdominal surgeons, and recourse made to vaccine therapy. Jowers records such a case in a girl of fourteen, in whom a diagnosis of general peritonitis, secondary, probably, to perforated appendix, was made. At operation the appendix was found to be normal, but the right Fallopian tube distended, the ovary swollen and adherent to the pelvic wall. The abdomen contained colorless pus. The pneumococcus was isolated in pure culture and a vaccine made. Upon the eighth day after operation 50,000,000 cocci were given; upon the tenth day 60,000,000, and upon the thirteenth day after operation 200,000,000 were given without the control of the opsonic index. The temperature only came to normal after five weeks, the pulse all this while being high. The child then made a good recovery. The impression conveyed from the published account is that, if the vaccine therapy had been controlled by index determination and persisted in, a more speedy result would have been obtained.

Three cases of acute pneumococcal conjunctivitis, progressing to hypopyon ulcer, have also been subjected to Allen's vaccine therapy. Two of these cases were under the care of Dr. Willoughby Lyle, who furnished the following notes upon them:

"A male, aged forty-nine, was suffering from a rapidly infiltrating corneal ulcer, with hypopyon two-thirds up the aqueous chamber. Local treatment was preserved with for twelve days without any improvement whatever taking place; in fact, the intra-ocular tension was raised and the local pain so great (and there was no perception of light) that it was almost decided to excise the eyeball. Vaccine therapy, however, was commenced, and local treatment persevered with. In four days the hypopyon began to disappear, and the cornea to clear at the margins. From that time until the patient left the hospital—four weeks later—the eye gradually improved. Altogether two injections of 250,000,000, and one of 500,000,000 pneumococci were given. On examination two days after leaving the hospital, the local condition was as follows: There was a large, irregular leukomatous patch, somewhat vascular, over the lower two-thirds of the cornea, a narrow ring of clearer cornea, below the leukoma. The margin of the pupil could just be seen over the nebulous cornea above. The intra-ocular tension was normal, and the patient could distinguish between light and darkness.

The second case was in a child, aged three years, seven months, who was admitted into the hospital with a central corneal ulcer with infiltrating margins and a small hypopyon. In spite of local treatment, the hypopyon increased, the ulcer spread, and the cornea ruptured. Vaccine treatment was commenced with a dose of 175,000,000 pneumococci, and from that time the eye began to clear. When the child left the hospital there was a large "leukoma adherens"; the cornea was somewhat vascular; there was a well formed aqueous chamber; the iris was a good color, and reacted readily to light.

"The favorable result obtained in these cases was very largely due to the vaccine treatment, and but for it the first mentioned patient would undoubtedly have lost his eye."

The third case was a very severe one. As soon as the pneumococcus was isolated, a dose of 250,000,000 of the pneumococcal vaccine, which had been prepared for Case 1 of Dr. Lyle's, was given. Improvement began within twenty-four hours, and progressed with extreme rapidity. The hypopyon was rapidly absorbed, and the patient discharged within a week.

Of the chronic forms corneal ulcer due to pneumococcus, the *ulcus serpens corneae* is best known. Two such cases have been treated by Allen, with complete success by means of autogenous vaccine. One of these deserves further mention. The patient was a man, eighty years of age, was admitted with a very bad corneal ulcer. A large hypopyon was present; the cornea was very opaque, the iris bound down by adhesions, and the tension was 1.5. Cauterization, paracentesis, and, later, sclerotomy for the relief of tension and evacuation of hypopyon, brought only temporary improvement, and excision seemed to be the only remedy. The condition was still acute when the pneumococcus was isolated and a vaccine prepared. Despite the high index to this organism—viz., 2.5—an injection of 250,000,000 organisms was given. Within three days the eye began to improve in appearance; at the end of a week the index was 4.2, and after a fortnight 3.0. A second injection was then given, with the result that eighteen days later the index stood at 6.3, and the inflammation had quite subsided. A large partial staphyloma of the cornea which developed later was treated radically by excision without the use of sutures. No reaction followed the operation, and the final result was an eye in which some slight vision was preserved, and a firm, flat scar in the cornea left in the site of the staphyloma. Several months later the eye was free from irritability.

RECENT TENDENCIES IN THE OPERATIVE TREATMENT OF GLAUCOMA.

A REVIEW OF RECENT LITERATURE.

By JOHN GREEN, JR., M. D.

1. CYCLODIALYSIS FOR GLAUCOMA.—Heine (*Deut. med. Woch.*, No. 2, 1905).
2. TREATMENT OF GLAUCOMA.—Heine (*Wien. med. Woch.*, March 3, 1906).
3. EXPERIENCES WITH CYCLODIALYSIS.—Boldt (*Beitr. z. Augenh.*, Heft 68, p. 463).
4. CYCLODIALYSIS.—Meller (*Oph. Soc. of Vienna*, 1907).
5. CYCLODIALYSIS IN THE OPERATIVE TREATMENT OF GLAUCOMA.—Weekers (*Klin. Monatsbl. f. Augenh.*, Aug.-Sept., 1907).
6. DISCUSSION ON MELLER'S PAPER (see No. 4).—Schnabel.
7. EXPERIMENTAL STUDIES UPON CYCLODIALYSIS.—Wichodzeff (*Klin. Monatsbl. f. Augenh.*, December, 1907).
8. CONCERNING CYCLODIALYSIS. EXPERIMENTAL INVESTIGATIONS ON ANIMALS.—Judin (*Klin. Monatsbl. f. Augenh.*, December, 1907).
9. IRIDENCELEISIS FOR GLAUCOMA.—Holth (*Ann. d'Oculist*, May, 1907).
10. PRODUCTION OF FILTRATION SCAR FOR GLAUCOMA.—Lagrange (*Arch. d'ophthalm.*, August, 1906).
11. FILTERING CICATRIX FOR GLAUCOMA.—Herbert (*Ophthalmoscope*, June, 1907).
12. SO-CALLED FILTERING CICATRICES IN THE TREATMENT OF GLAUCOMA.—Henderson (*Ophthalmoscope*, December, 1907).

Recent developments in the operative treatment of glaucoma indicate a growing belief in the inefficacy of the classical operations of iridectomy and sclerotomy (at least for certain types of the disease) and a tendency to the creation of novel operative methods based on new principles or designed to enhance the effect of older methods.

In considering any novel operative attack we may recall that the ingenuity of several generations of ophthalmic operators has failed to develop a procedure as efficient or as widely applicable as either iridectomy or sclerotomy. We have only to recall the failure of sympathectomy to live up to its earlier promise to understand that more recent methods, now so bright with promise, may eventually rank no higher than sympathectomy in the estimation of operators.

Foremost among the newer operative procedures is that devised by Heine to which he has given the name "cyclodialysis." Reasoning from Axenfeld's dictum that the success of iridectomy in many cases depends upon the establishment of a communication between the anterior chamber and the suprachoroidal space, Heine has sought to effect this communication in the following manner: A flap of conjunctiva 8 mm. from

the limbus is raised and caught by a suture. With a lance or Graefe a tiny opening is made in the sclera parallel to the corneal margin and 5-6 mm. away from it. Great care is taken not to injure the uveal tissue. A spatula or iris repositor is introduced between the sclera and the choroid and gently pushed forward through the ligamentum pectinatum until the tip enters the anterior chamber. The opening in the ligament is enlarged to 2-3 mm. by lateral sweeping motions of the spatula which is then cautiously withdrawn and the suture tied.

In favorable cases tension is reduced, the anterior chamber deepens, the field widens and central vision improves.

In a later paper based on 56 operations Heine states that in two cases of bilateral glaucoma in which iridectomy was performed on one eye and cyclodialysis on the other, the results were better in the eyes with the cyclodialysis operation. It is considered less dangerous than iridectomy, the pupil remains round and hence responds better to miotics. It is applicable to certain varieties of the disease, e. g., hemorrhagic glaucoma, buphthalmus, etc., in which iridectomy is contraindicated.

The operation has been received with great interest by ophthalmologists throughout the world. Boldt, on the basis of an experience with 37 cases, states that the operation offers no difficulties. The possible complications are irido-dialysis, penetration of the corneal lamellæ by the spatula, and the entanglement of the instrument in the iris owing to the rapid escape of the aqueous. In 31 cases there was unmistakable improvement for a longer or shorter time. Varieties of the disease most suitable for this operation are chronic inflammatory, simple, hemorrhagic and juvenile glaucoma, glaucoma associated with high myopia and buphthalmus. Meller, in a very complete discussion of the operation, reports in 40 per cent permanently favorable results, in 30 per cent temporarily good results and in 30 per cent no result. Weekers on the basis of 5 cyclodialysis operations in advanced chronic glaucoma believes that the operation has not fulfilled expectations for advanced cases. The question of its possible efficacy in early cases is as yet unsolved. Schnabel is opposed to the operation on three grounds: first, that it is technically impossible to perform; second, that it depends on theoretical considerations which he considers without foundation; third, that it might possibly replace the condition of glaucoma with that of another disease, namely, essential phthisis. Experimental studies on cyclodialysis by Wichodzeff and Judin gave rather inconclusive results, though tending to show that the operation may produce unexpected anatomic effects.

It has long been known that the formation of a cystoid scar through unintentional incarceration of the angle of the coloboma after iridectomy—a technically imperfect result—often resulted in a more effectual termination of the glaucomatous process than when the operation had been technically faultless. Some operators have even advocated the deliberate incarceration of the iris in the wound with a view to producing just such a condition. The occasional occurrence of infection in such scars and the possibility of such eyes giving rise to sympathetic disease through traction on the iris and ciliary body have deterred most operators from adopting this method. Recently Holth has devised an operation,—“iridencleisis antiglaucomatosa”—having for its immediate object the subconjunctival prolapse of the iris and for its ultimate object the formation of a cystoid scar. Through a scleral incision the periphery of the iris is drawn up and allowed to heal in the wound. Usually a fistula is produced which is lined with pigment epithelium and

which extends to the subconjunctival connective tissue. Simple adhesion of the iris without formation of a fistula may lead to normal tension by communication of the uveal and subconjunctival blood and lymph vessels.

The manifest disadvantage of this type of filtering scar has led several operators, notably Lagrange and Herbert, to devise operations which should permit of filtration but without involvement of the iris. Lagrange makes an oblique scleral incision terminating in a large conjunctival flap. The anterior lip of the scleral wound is then seized by forceps and a small piece cut out of it by means of a fine pair of curved scissors. Finally, an iridectomy is performed. In Herbert's operation the incision is associated with the isolation of a single wedge of corneo-scleral tissue. His results in the production of a filtering scar have been uniform and trustworthy. One advantage of this method is that in case of failure the procedure does not forbid other operations.

On the basis of anatomical studies, Henderson endeavors to show that the success of operation in glaucoma does not lie in a filtering scar, but in the accompanying iridectomy. After an incision into the anterior chamber the endothelial cells grow along the internal margin of the wound and so come to seal it off. Once the growth of endothelium is complete the wound is no more a filtering scar, but is shut off from the anterior chamber by a layer of new-formed endothelial cells which proceed to lay down a new homogenous membrane between the cut surfaces of Desemet's membrane. It is this endothelium that precludes all possibility of a permanent filtering cicatrix following any operative incision however devised.

THE STATUS OF THE HORMON QUESTION.

A REVIEW OF RECENT LITERATURE.

By CARL FISCH, M. D.

1. THE HORMONS OF BREAST DEVELOPMENT DURING PREGNANCY.—Starling & Lane-Caypon (*Proc. Royal Society*, R. 77, 1906, 505).
2. THE PHYSIOLOGIC CHARACTER OF HORMONS.—Starling (*Centralbl. f. d. Gesamte Physiol. und Pathology des Stoffwechsels*, 1907, No. 5 and 6).
3. THE RELATION OF SECRETIN TO THE PANCREATIC SECRETION.—Starling (*Journ. of Physiology*, Vol. 28).
4. STARLING'S CROONIAN LECTURES (*Lancet*, London, 1905, I & II).
5. EXPERIMENTAL INVESTIGATIONS ON DIABETES.—G. Zuelzer (*Berl. klin. Woch.*, 1907, No. 16).
6. LATER INVESTIGATIONS ABOUT EXPERIMENTAL DIABETES.—Zuelzer, Dohrn & Marxer (*Deut. med. Woch.*, 1908, No. 32).
7. SPECIFIC STIMULATION OF INTESTINAL PERISTALSIS BY INTRAVENOUS INJECTION OF PERISTALSIS HORMON.—Zuelzer, Dohrn & Marxer (*Berl. klin. Woch.*, 1908, No. 46).
8. THE CONNECTION BETWEEN MUSCULAR TISSUE AND THE PANCREATIC INTERNAL SECRETION.—Cohnheim (*Zeitschrift f. physiol. Chemie*, Vol. 39).
9. DIABETES AND THE REACTION OF PANCREAS EXTRACT ON THE MUSCLES.—Cohnheim (*Zeitschr. f. physiologische Chemie*, Vol. 42).

The reason for reviewing the present status of the hormon problem, introduced into science some years ago by Starling, is found in the last paper by Zuelzer quoted above. A great change in our present conceptions concerning the functions of the so-called glands with internal secretion, will undoubtedly occur as a consequence of further study of the subject of hormones. While formerly the varying relation between certain tissues on the varying influence of one tissue upon another was explained on the theory of nervous changes, more recent studies of definite substances, the products of different organs and tissues, have led to the theory that these products, carried through the blood and lymph channels to certain structures, exercise a specific activity upon these structures. That these products are formed in many cases in the so-called glands with internal secretion was distinctly known for a long time as regards the thyroid, parathyroid and suprarenal glands, and in a lesser degree, the pituitary body. The interrelation of all these structures in their influence on the functions of the living organism was first pointed out by Sajou, who built up a theory by which he endeavored to explain most of the pathologic problems. Baumann was the first to establish for the thyroid the production of a definite compound, the iodothylin. The existence of a definite substance in the parathyroid is also certain, and for the suprarenal the hormon is chemically definite and can be artificially produced. The effects of these substances, either by overproduction or by

the absence of production, can be experimentally demonstrated. All of these are disseminated by the fluids of the body into which they are brought from the producing structures. All of them differ from any other proteid compounds by their thermostability. Their action is not, like the other substances carried by the blood, of a nutritive character, but only that of a stimulant or irritating agent. They are carried from the site of production to far distant organs.

About four years ago, Starling, together with Bayliss, studied the nature of the action of the acids brought into the duodenum stimulating immensely the pancreatic secretion. They observed this effect after separating altogether the pancreas and duodenum, and injecting acid into a ligated piece of intestine which had been deprived of all nerve connection. The pancreatic secretion was increased to the same degree and therefore must be due to a definite substance. The scrapings of the duodenal mucosa were triturated, boiled, and extracted with alcohol. After evaporation a substance was obtained that caused, when injected intravenously, excessive pancreatic secretion. The substance was called secretin and the secretion of this secretin is caused by the presence of acids in the duodenum. While certain influences of the nervous system (for instance, Pawlow's "appetite" secretion) are proved, it is now established that several secretions of the intestine are produced by hormones in different portions of the intestinal tract and of the stomach. Bayliss ascertained that the production of bile is also stimulated by secretin. That the glycolytic power of the pancreas is not due to the secretion into the duodenum is a fact long well-known. Diabetes does not develop if all the secretion is removed through a fistula. Cohnheim, observing the constant presence of glycogen in muscles and the liver, proceeded to press out fluids from the pancreas and muscle tissue, but none of these fluids had any effect on glucose. If, however, to the muscle extract a minute quantity of pancreatic extract was added, the glucose was quickly split up into alcohol and carbonic acid. Hirsch afterward established the same action for the pressed out fluid from the liver, that in itself has a slight degree of glycolytic power but with the addition of a small amount of pancreatic extract becomes powerfully glycolytic.

Zuelzer demonstrated that one hormone (adrenalin) had the specific function of mobilizing sugar, and that this diffusion of sugar is regulated by an antagonistic hormone present in the extract of pancreatic tissue. He has lately added to the hormone group an exceedingly important investigation. The idea that the function of intestinal peristalsis was not of nervous origin only, but was due to a definite chemical substance acting on substances in the muscular structures, was followed up experimentally. Pawlow has demonstrated that mastication has a great influence on the secretory activity of the stomach, and that the duodenal Brunner's glands depend for their secretion upon the antecedent production of hydrochloric acid in the stomach. This made it very suggestive to look for a hormone regulating peristalsis as formed in the stomach. An empty stomach is free from such a substance. The animals experimented upon were used at the time of the height of digestion, a point that in previous experiments in work on the pancreas secretion promised results. From the mucosa an alcoholic extract was made after the method described before. If this substance is injected intravenously, peristalsis starts in a few seconds in the duodenum and extends to the rectum. In experiments in which the intestines in the anesthetized rabbit were kept floating in salt solution, the fecal material is seen to move from above to the anus. The experiments were made with material obtained from rabbits, hogs, cows and

horses. All of them showed the presence of this hormon. Interesting is the finding that of the four so-called stomachs of cattle, only the portion that performs the digestion, the omasum, contains peristalsis hormon, not the three others.

That hormones play a great part in other phenomena and conditions is very probable. The internal secretions of the large interstitial cells of the testicle, that are of the same genetic character as the cells of the tubules, when removed by excision of the testicles, prevent the development of secondary sexual changes. Removal of the seminal vesicles alone has no influence on their appearance. The same obtains for the ovaries that, also, when removed before maturity, lead to the same defect. That the internal secretion of the ovaries has a great deal to do with the changes during pregnancy in the sexual organs, etc., especially that the lutean bodies are made responsible for the preparation of the mucosa for the imbedding of the ovum, are opinions that have been held for some time. Whether the development of the breasts and the secretion of milk is of the same origin and due to the ovarian secretion carried to them by the blood, is doubtful, although not disproved by an interesting series of experiments made by Starling on female rabbits. He used only females that were as yet virginal. In these animals the breasts were distinctly rudimentary. On examination they consisted of a very few strands of epithelial cells, with no definite glandular structure or arrangement. Starling injected into these animals an extract made from embryos and succeeded in obtaining in these animals the same development of the breasts as is found in the corresponding stages of pregnancy. There must be present in the body of the embryo a substance that specifically stimulates the "anlagen" of the breasts of the rabbit and prepares them for their function.

The importance of these investigations, and some others that so far are not worked out with the same degree of completeness and conclusiveness, lies in several directions. The modern tendency to explain metabolic and other processes in the main by fermentative action, extra- and intra-cellular, is to a degree checked by the work on the hormones, which point to direct chemical processes. The latter, on the other hand, proves the intimate relation and co-working of tissues located at great distances from each other, brought by means of the circulation into physiologic activity, and form, in their connection, the unity of a physiologic process involving different tissues and organs,—another evidence for the unity of the system, for the importance of the whole in the functional qualities of the constituents, the cells, that are only the product of the needs and integrity of the whole. That an organ of specific importance for life should be unable to perform its function without the influence of the products of another specific organ, is evidence of the primary wholeness of the organism, of which the cells are only the factors directing the energy in the various ways allowing of the existence of life. The former belief, that the functions of many organs were controlled only by the nervous system, and that pathologic functions were due to the changes in the innervating fibers, must, to a measure, be limited to a smaller scope, a view that had been entertained before the demonstration of hormones was possible.

BRACHIAL PARALYSIS.

A REVIEW OF RECENT LITERATURE.

By MALVERN B. CLOPTON, M. D.

1. BRACHIAL BIRTH PALSY.—Clark-Taylor-Prout. (*Am. Journ. Med. Science*, Vol. cxxx, p. 678).
2. SOME OBSERVATIONS ON PARALYSIS OF THE BRACHIAL PLEXUS.—Warrington and Jones (*Lancet*, 1906, December 15, pp. 1644-49).
3. RESULTS FROM THE SURGICAL TREATMENT OF BRACHIAL BIRTH PARALYSIS.—A. G. Taylor (*Journ. A. M. A.*, 1907, Vol. xlviii, pp. 96-104).
4. OBSTETRICAL PARALYSIS.—Osterhaus (*N. Y. Med. Journ.*, November 7, 1908).
5. INJURIES OF THE NERVES.—Sherren (*Injuries of the Nerves and Their Treatment*. London, 1908).

Clark, Taylor and Prout, after an extensive review of the subject of brachial birth palsies, find that there has been no demonstrated proof of the theory that traction causes the nerve lesion occurring most frequently in breech and vertex presentations. In experiments on twenty infant cadavers, they were able to reproduce lesions identical with those found in the seven cases they operated. Of the experimental lesions 80 per cent were of the 5th and 6th nerves above the point where they fuse to form the outer cord,—the 5th always giving way first. The lesion consists of tearing of the nerve sheath, with a hemorrhage which infiltrates the structures of the nerve as it is ruptured at varying levels. Later at operation a much thickened cervical fascia was found adherent to the nerve roots. In one case at operation there was a distinct severance of the 5th root before its junction with the 6th, and the nerve ends were rounded and imbedded in the cicatricial hemorrhagic mass. Organization of a blood clot and healing of the sheath takes place before the nerve fibers regenerate and may prevent regeneration in a large number of cases. The suprascapular nerve comes off at the junction of the 5th and 6th roots, where there is usually the most damage, and in operating it should be carefully sutured to the proximal nerve stump. In many cases the nerve is in anatomical continuity, but on palpating a scar can be felt, usually at the junction of the 5th and 6th. The authors believe that palliative treatment should be followed for a year, because recovery may progress for that time, and by waiting the field of operation is larger and the lesion can be more definitely localized. There is also less danger from operative shock and hemorrhage. Kennedy, in 1900, was the first to operate to excise the scar in cases of brachial palsy, but since then many cases have been reported. The authors have seven of their own operated cases, but of these only two were of sufficient interval after operation to report on the end results and both showed marked improvements. The extent of the paralysis determines the part of the plexus to investigate, but usually it is the 5th and 6th roots. The in-

cision is along the posterior border of the sterno-mastoid in its lower two-thirds and is carried in until the omo-hyoid is exposed and if necessary divided. The suprascapular vessels may need to be divided, particularly if the lower roots are attached, and at times the clavicle is cut to get a proper exposure. The deep cervical fascia is divided in the direction of the plexus, and the nerve trunks dissected away from it, and the extent of their injury determined by palpation and inspection. With a sharp knife (not scissors) the indurated areas are excised and the nerve ends approximated by lateral fine silk sutures, and the anastomosis is wrapped with Cargile membrane. The head is dressed in a position to approximate the shoulder, and thus is prevented any traction on the sutures until healing is perfect, which is in three weeks. Of the seven cases two died, one from diarrhoea, the other, after an extensive operation on the whole plexus, from shock.

Warrington and Jones have observed 30 cases of paralysis of the brachial plexus with 11 complete recoveries. Birth palsies are less favorable than injuries in adults. A small group is due to spontaneous neuritis; the others were traumatic. Some were birth palsies, the others were due to falls on the shoulder or hitting the patient on the neck. The one case they had due to dislocation of the shoulder recovered after operation. They accept the traction theory, and believe that when the child is peevish and in pain, a tearing has taken place and spontaneous recovery rarely follows, but that pressure of a cicatrix outside a nerve is not accompanied by pain and recovery is most likely. The roots may be torn out and change then takes place in the cells of the anterior cornua. There is no means of diagnosing the extent of the lesion immediately after incidence as symptoms of compression or complete rupture are identical. The alteration of sensation is only found when the injury is of the lower roots; the upper roots may suffer severely without loss of sensation, and the 5th root is said to contain no sensory fibers. In none of their cases with full paralysis of the upper roots or lower roots did recovery ensue. The nearer the spinal cord the injury is found, the worse the prognosis. A pupillary paralysis results from an intra-vertebral lesion. A rhomboid, serratus magnus and levator anguliscapuli paralysis indicates a lesion internal to the extra-vertebral portion (rhomboid and posterior thoracic nerves). A supra- and infra-spinati paralysis indicates a lesion before the plexus is formed.

The treatment in the beginning is supporting. Complete recovery of a muscle rarely comes when paralysis is present for 3 weeks, unless the elongated muscles are relaxed, so the arm must be held in a sling. The interval before operation is fixed at 8 months, for by this time the signs of recovery without operation are evident. They operate as in the method described above. The injury to the nerves is determined both by palpation and a direct view and further they use an electric current to determine which bundle of the nerves remains intact and which is injured. In this way, particularly with the 5th and 6th, it is found that the 5th is always most injured and that the 6th is frequently only bound down by a scar. In every method of junction, success has been obtained. Clearly, when possible, end to end junction is the ideal method, but in brachial injuries this procedure is only occasionally available, and the cicatrix makes nerve stretching impossible, and a pull on the nerve makes the suture less effective. With Spitzzy they favor imbedding the pathological into healthy nerve, more particularly the 5th when it has been ruptured close to the emergence, into the healthy 6th (anastomosis). They use Sherren's classification of nerve transplantation, nerve anasto-

mosis and nerve crossing, excluding the term nerve grafting. In their operated cases they had several successes, but the proportion of failures to successes is not mentioned. The results of Robert Campbell with three recoveries out of six cases operated, and Thornburn with one case with partial recovery when operated 7 months after injury, are mentioned. Sherren had one case in which he sutured the upper and middle trunks 9 weeks after the injury, followed by improvement in sensation and motion in 182 weeks, but it was 333 weeks before all the muscles reacted, which shows that a delay in return of function may be great but recovery eventually ensues. Using Kennedy's and other's cases, they found that in children aged 2 months, 14 years, 2 months, 3 months, 10 years and 8 years, that voluntary power returned in $2\frac{3}{4}$ months, $1\frac{1}{4}$ years, $2\frac{3}{4}$ months, 4 months, 3 months and 5 months respectively after operation.

In a later paper Taylor reports on the operative results in nine birth palsies. Because of the impaired development of the extremity, contractures of muscles and ligaments and atypical shape of the joint ends of the bones, all of which cause the characteristic deformity of the lesion and which render post-operative return of the extremity toward normal extremely slow, early operation is indicated, that is in from 6 to 12 months. Some additional palsy is usually caused by the operation but this is soon recovered from, and following operation there come improved nutrition and growth of the extremity with increased range and power of motion. Of the seven cases recovered there was no shock or rise of temperature. There is a change in nutrition about the 4th month, and the return of power in the muscles paralyzed by the operation is usually rapid and may be complete at the end of from 6 to 8 months, although one case took 15 months. The return of power in the previously paralyzed muscles appears in from 6 to 10 months. Stress is laid on the careful suture of the suprascapular. In one case there was an evidence of nerve bridging through a space of 2 c.m. after excision of the entire plexus, with some return of motion in six months.

Osterhaus applies the principle of nerve bridging in a new way. Instead of using cat-gut or other material as in aid to direct the new fibers, he allows the scar tissue to take this place. This is done by lifting the nerve from its sheath on two fingers and with a sharp tenotome the nerve fibers constricted by the scar are completely dissociated by innumerable cleavages in the direction of the long axis of the nerve. Cargile membrane is then wrapped about it. The return of function that followed was very rapid.

Sherren in several cases in which he performed nerve anastomosis in this region was able to stimulate the 6th with the interrupted current, producing a contraction of the clavicular portion of the pectoralis major and in one a feeble response in the triceps, and concluded that the 6th cervicle supplies no group of muscles in the arm and forearm.

A patient with paralysis may be unable to supinate the forearm and abduct the arm and in most cases to flex the forearm, but there may be some flexion of the forearm when fully pronated due to forearm muscle arising from the external condyle although the biceps and brachialis anticus remain palsied. After this or after other nerve injuries the abnormal position of the limb may persist although the muscles have regained their normal power of movement, and these may remain permanently wasted, because of the inefficiency of the after treatment.

The lower arm type (Klumpke) of paralysis, if due to injury, is usually due to traction on the roots from below as in falling from a height

and grasping at a projection, or overflexion or overextension of the neck; in the last cases it may be bilateral. All the muscles of the hand are affected and the hand assumes the true claw-shape. Sensibility is usually altered over the inner side of the arm and forearm, sometimes the ulnar border of the hand. Orbital symptoms may follow from injury to branches given to the cervical sympathetic.

Inner cord injuries are the most common after Erb-Duchenne paralyses and are due usually to a subcoracoid dislocation of the humerus. They nearly always recover without operation. The muscles paralyzed are those supplied by the ulnar and muscles of the hand supplied by the median.

Posterior cord lesions also follow dislocation of the humerus and are followed by paralysis of the muscles supplied by the musculo-spiral and circumflex nerves with the alternation of the sensibility over the areas of skin supplied by these nerves.

Sherren states that no instance of perfect recovery after secondary suture of the whole plexus has been recorded. In injuries of the lower arm type the lesion is in the first dorsal and the clavicle will have to be divided, and an anastomosis to the eighth cervical be made.

In birth palsies Sherren has found in his practice a spontaneous recovery in about 70 per cent of the cases, over twice as many as reported by others. In many instances paralysis had completely disappeared by the time the child was brought to have its electric reactions tested at the age of three months. Complete spontaneous recovery rarely takes place if no improvement is noticed by this date.

DIAGNOSTIC AND THERAPEUTIC NOTES.

BEE'S STINGS AND RHEUMATISM.—E. W. Ainley Walker (*The Brit. Med. Jour.*, 1908, No. 2493) has investigated the statement that the sting of a bee will cure chronic rheumatism. Walker collected information from country doctors, bee-farmers and from Dr. Ferc in Austria, who treated 700 cases of chronic rheumatism with bee's stings during the last 30 years. That the subject is worthy of earnest consideration is evidenced from the reports collected by Walker. A peculiar fact brought out in these investigations, is the knowledge that sufferers from rheumatism are very little susceptible to the bee's sting. The active principle in the bee's poison is probably formic acid, which is found in the poison with an alkaloid. Further study of the subject is advisable, and hypodermic injections of the poison could be tried.

DIAGNOSTIC USE OF THE DIFFERENTIAL CUTANEOUS REACTION.—Detre (*Wien. klin. Wochenschr.*, 1908, No. 41).—Detre's method is a development of von Pirquet's test. At three different spots the patient is inoculated with old tuberculin, the filtrate of a culture of human tubercle bacilli and a filtrate of a culture of bovine tubercle bacilli. If none of the inoculations produce a reaction, the patient is free from tuberculosis. If the culture of bovine bacilli produces a stronger reaction than that of human bacilli, the infection is of bovine origin; if the reverse, the infection is with human bacilli. This method, if trustworthy, not only throws light upon the etiology of the disease but enables a rational immunization therapy to be carried out, human tuberculin being used for infections with human bacilli and bovine for those with bovine bacilli.

EARLY DIAGNOSIS OF TUBERCULOSIS.—Calmette (*Deutsch. med. Wochenschr.*, 1908, No. 40).—At the recent international tuberculosis congress in Philadelphia, Calmette reviewed the various tuberculin tests and concluded that his method of ophthalmodiagnosis is to be preferred to all others. His conclusions are based on an enormous material and, contrary to the opinion of many other clinicians, he believes the test to be absolutely harmless. Properly interpreted it is trustworthy. Patients who react to the instillation are always tuberculous. On the other hand, a negative reaction does not exclude tuberculosis since the test fails in tuberculosis of long standing, in cachexia and in acute tuberculous affections.

THE VALUE OF BLOOD PRESSURE MEASUREMENTS IN CHRONIC NEPHRITIS.—Engel (*Muench. med. Wochenschr.*, 1908, No. 41, p. 2154).—Engel attempts to utilize the variations in blood pressure in nephritis prognostically as follows. Only the mildest cases of chronic nephritis remain parenchymatous and therefore free from elevation of blood pressure. In more severe cases of chronic nephritis, the absence of high blood pressure indicates a lack of cardiac compensatory hypertrophy and involves a bad prognosis. A steady, not erratic, rise in blood pressure is by no means a grave sign. Outspoken, genuine contracted kidney is

characterized by a great elevation of blood pressure; contracted kidney secondary to arterio-sclerosis produces only a moderate degree of elevation. A sudden fall of the high blood pressure of chronic interstitial nephritis should always be considered a sign of serious trouble impending.

THE TREATMENT OF CHRONIC CONSTIPATION.—Liebman (*Wien. klin. Wochenschr.*, 1908, No. 39) remarks that chronic constipation is often cured in a short time by having the patient wear an abdominal bandage. In a great many of these cases the constipation is due to enteroptosis, especially gastropptosis, causing a descent of the colon and occlusion of same. Röntgenologic examination shows the good action of the abdominal bandage. Especially, when the pressure is applied above the symphysis, the colon could be seen raised. Regular and normal defecation is generally accomplished in a few days.

THE MOVABLE COECUM AS A CAUSE OF MANY CASES OF SO-CALLED CHRONIC APPENDICITIS.—The symptoms of so-called chronic appendicitis are not typical and their cause may be quite different. A macroscopic, healthy appendix is often removed by operation in these cases, in which the pathologist finds some simple changes that can not account for the attacks of pain or the pain at McBurney's point. Very often during the operation it is noticed that appendix and coecum can be brought outside of the wound very easily. Wilms (*Deutsch. med. Wochenschr.*, 1908, No. 4) removed the appendix in these cases *more maiorum*, but at the same time fixed the cecum. The results of these operations (40 cases) were very good, which can not be said of simple appendectomy. The pain in these cases is caused by stretching of the mesenterium of the mesenteriolum.

ATAXIA LOCOMOTOR AND PARALYSIS IN THE LIGHT OF THE NEWER SYPHILIS RESEARCH.—Fritz Lesser (*Berl. klin. Wochenschr.*, 1908, No. 29) states that Wassermann's syphilis reaction is positive in paralysis in 100 per cent. of the cases and in ataxia locomotor in 50 per cent. of the cases examined. Both diseases must be looked upon as the result of syphilis, but in none of them is the real process a syphilitic one. It is the result of nerve degeneration, caused by meningitis syphilitica, which may still be present or not. The meningitis luetica may be compared with the media infiltration in aneurysm of the aorta. This explains why antiluetic treatment does not benefit the disease. Healthy persons, who have suffered from syphilis before, show the reaction in 50 per cent. of the cases; and these are apt to be afflicted with ataxia locomotica and paralysis. It is possible, according to Lesser's experience, to make the reaction disappear by specific treatment. Healthy persons showing the reaction should therefore undergo antisiphilitic treatment for a considerable time. This is the best prophylaxis for paralysis and ataxia locomotica.

POTASSIUM IODIDE IN SUPPURATION OF THE NASAL CAVITIES.—H. Hempel (*Berl. klin. Wochenschr.*, 1908, No. 29).—Potassium iodide, 5 per cent. solution, a teaspoonful three times daily, has a very favorable influence on acute and chronic suppuration of the nose cavities. The pain soon disappears and the secretion becomes less thick. It should be tried before advising an operation.

OBITER DICTA FROM FOREIGN JOURNALS.

TUBERCULOSIS IN PRISONS.

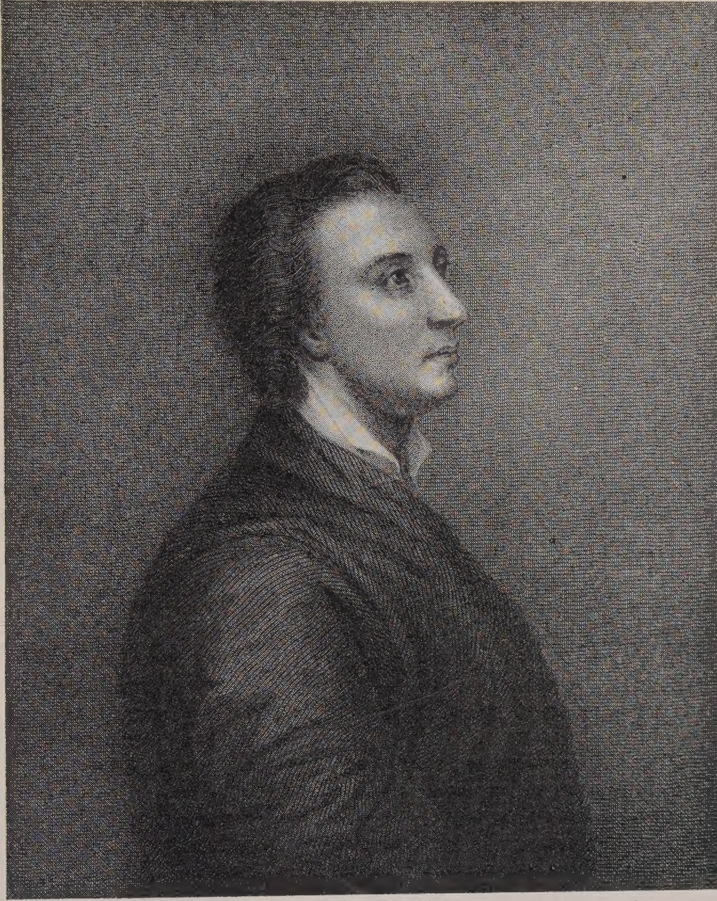
In his Paris thesis, recently published by Bonvalot-Jouve, Dr. Henri Meuvret has written interestingly on the subject of tuberculosis in French prisons in connection with a general survey of the penitentiary system, and the details, but little known, of the not uninteresting lives of the prisoners. His conclusions are that the mortality from tuberculosis is high, being thrice as great as among the unincarcerated, and that the matter of detention, whether in a cell or in a penitentiary, does not affect the high death-rate. Again, in the colonial penitentiaries, situated in Corsica, where agricultural pursuits are demanded and one would expect some amelioration of conditions, the mortality is not lessened. The one exception is the prison at Fresnes, which, on account of the ultra-hygienic conditions and a mild regime to which the prisoners are subjected, may well be described as the ideal prison. The true reason for a greater frequency of tuberculosis among prisoners can be easily explained on the ground that nearly all of them are more or less damaged by alcoholic and other excesses, and are often the victims of the disease before entering the prison. Considering how deplorable is such a condition, one can readily see with what ease the tuberculous germ enters so inviting a soil, and just why a disease, which elsewhere is to some extent successfully combated, pays so high a tribute to death in the prisons.

Of the life of the prisoners at Fresnes—only cells are in this prison—a detailed account is given. On his arrival from Paris, the prisoner is subjected to certain formalities: douche bath, anthropometry, etc. Cleaned, dressed, numbered, and provided with one of the 5,500 volumes in the library, he is conducted to his apartments—that is to the cell which he will henceforth occupy. Three meters high, four meters long and two and a half meters wide, the cell, of which a model was shown at the Exposition of the International Congress on Tuberculosis in 1905, alongside a model of the best room of a wealthy merchant's house in the Champs-Élysées district of Paris, is perfectly lighted by a window provided above with a casement which the prisoner can open or close as he sees fit. The angles of the wood-work are carefully rounded and the walls are painted white. The superior cleanliness of the room, together with its arrangement, makes it not unlike an operating room in a modern hospital. On one side of the cell is an iron bed provided with a straw bolster, two sheets, and one blanket in summer and two in winter. In a corner, on a what-not, surmounting a row of pegs for hats and coats, there are an enameled washstand, a fork, a knife, a goblet, two plates and a bottle. In another corner is a lavatory, the bowl of which is of enameled faience and the flushing on the most modern plan. Against the wall, opposite the bed, is a small table which can be raised or lowered at will. A wooden chair is chained to the wall. The air in the cell is purified by means of a ventilator which has the capacity of sixty cubic meters an hour. In winter the temperature is maintained at 15° C.

Directly the prisoner is in his quarters, what is exacted from him? Work, but not the sort that may be uncongenial to him; for a matter of

great importance to the authorities is not to make light of his former business pursuits. In case his predilections are in the manufacturing line, he is put to work on one of the following articles, his choice in the matter receiving due attention: paper balloons, small fans, metal purses, metal clasps, chairs, engraving on copper, and other useful things. The government retains 50 per cent. of his earnings for maintenance, 25 per cent. is placed to his account, to be turned over to him on leaving, and the other 25 per cent. is his to spend on dainties; for in case he prefers something better than the ordinary fare, he can satisfy his wants at the canteen where things are sold almost at cost. All that he has to do in the matter is to give his order and, provided it does not exceed 60 centimes a day, no objection is raised to his expenditures. In summer he arises at six, in winter a half-hour later. His toilet completed, his bed made, he is ready for his daily work. It is not difficult to see that the prisoner's life is not one of durance vile. He is an object of solicitude. Thanks to precautions taken by the authorities, the rigorous winters are ameliorated for him; congenial work, without causing fatigue, occupies his time; he even finds the means to save some money. In case he is ill, medicines of the best quality are given him, and the best medical service in the town is enlisted. In these circumstances a prison is no longer a place to be hated by the incarcerated. The morale of the prisoner is not so greatly affected as it would be in less desirable conditions, and the result is that he feels but slightly the degradation that a less friendly hospitality would entail.

HISTORICAL NOTES.



Mark Akenside.

DR. MARK AKENSIDE.

Didactic poetry which was read with so much enjoyment in the 18th century, found an excellent champion in Dr. Mark Akenside. His "Pleasures of Imagination" takes us back to a time when moralizations were in vogue to elevate the tone of society and give solace to those who in the daily grind of life had somehow overlooked the importance of the gentle exercise of man's resources. The gentility which pervades this long-winded poem cannot be questioned; and as for interminable advice as an incentive to achieving a happier outlook so as "to face the unknown with a cheer," there are so many indications throughout its Four Books that the modern reader feels quite rebellious under the overweight of such undesired gratuity. But though digestion of so large

a quantity of optimism palls on the modern mind, we must not forget that in the century in which the poem was written, there were no choice spirits like Schopenhauer and Nietzsche to accustom the people to the advantages of a heaven of pessimism. Be this as it may, "Pleasures of Imagination" invites criticism on other grounds, for while it is not autobiographical in the usual sense of the word, it is quite personal enough to be thought a true transcription of the poet's innermost thoughts—his philosophy of life. And herein it is more than insincere, for the man who fathered it was so decidedly mundane that we are not subjecting him to any violent prejudices when we say, that if he ever got any pleasure out of his own imagination, unassisted by the consoling thought that his practice was a lucrative source of income, it must have been some years before he arrived at man's estate.

Dr. Mark Akenside's career as practicing physician was not unusual in any respect. He studied at Edinburgh, then at Leyden, where he obtained the degree of M. D., May 16, 1744; the formation and growth of the human foetus being his dissertation. Soon after his return from Leyden he began to practice at Northampton, where his success was not great. The one incident of his sojourn in that town was an amicable controversy with Dr. Doddridge concerning the opinions of the ancient philosophers with regard to a future state of rewards and punishments, in which Dr. Akenside supported the firm belief of Cicero, in particular, in this great article of natural religion. After leaving Northampton, he moved to Hampstead where he resided upwards of two years and then finally went to London. At first he had but little practice, and would probably have been reduced to difficulties had not Mr. Dyson, his intimate friend, generously allowed him £300 a year, which enabled him to make a proper appearance in the world. In time the doctor acquired considerable reputation and practice; he became a Fellow of the Royal Society, a physician to St. Thomas's Hospital, was admitted to the degree of Doctor in Physic in the University of Cambridge, and elected a Fellow of the Royal College of Physicians in London, and upon the settlement of the Queen's household was appointed one of the physicians to Her Majesty.

All this reads very nicely and makes one feel that the gradual rise of Dr. Akenside was conducive to all the amenities of life. We picture him contented and at peace with the world. The snarls that enter so largely into the lives of those who are continually struggling for an existence—twists that upset one's temper—were foreign to his nature, we conclude; and especially are we predisposed to this opinion when we limit our investigations to the number of his titles, or draw conclusions of what his life really was from the wisdom and philosophy of his famous poem. But the reverse side of the picture calls a halt on our enthusiasm, for on examining the details of his life we find that despite the exalted tone of his didacticism, he was but a poor follower of his own preachings. Even when he was in enjoyment of a large and lucrative practice he did not disdain to receive the £300 Dyson had advanced him when he was in dire need. His meannesses were many, his irascibility was unpardonable; loveliness and high-mindedness were not ingredient parts of his make-up. Smollett saw opportunities in his many failings to delineate a character; hence the "Doctor" in "Peregrine Pickle," for which the reading world is not ungrateful. To-day our interest in Akenside lies in the fact that he was one of the few medical men of all times who has written good poetry. But when we say this we have said all, for his career as a practitioner has nothing to commend it; indeed, in spite of his successes, his low lights were many, his high lights few.